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OF BOSTON.

(Class of 1851).

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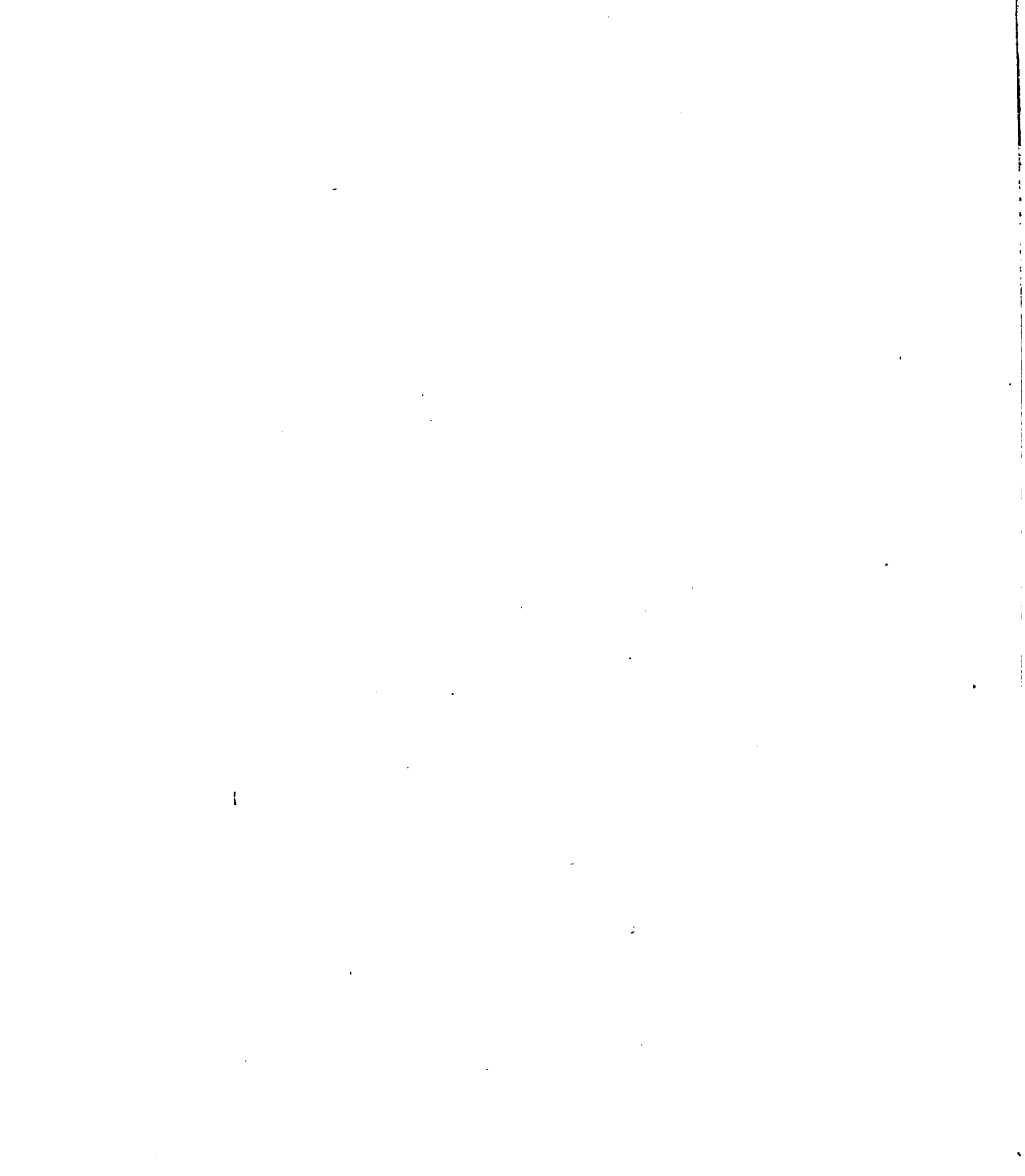
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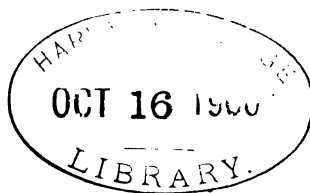
THE BOOK OF
COMPLETE INFORMATION
ABOUT PIANOS



PUBLISHED BY
WING & SON, PIANO MANUFACTURERS
202-204 East 12th Street, New York

THIRTIETH THOUSAND

Mv2 345,9



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FRANK L. WING, NEW YORK

PREFACE

THE piano is the most complete of all musical instruments. At its best it combines the most pleasing qualities of other instruments into a harmonious blending of sound which no other instrument can equal. It unites the richness of the pipe organ, the distinctness of the violin, and the softness of the guitar, besides other qualities which none of these possesses. It is like the mocking-bird, who outsings all the other birds in their own melodies, and, besides, has a song of its own which none of them can match.

Rubinstein, the great prince of pianists, said : " I prefer the piano to any other instrument because it is a musical entity ; all other instruments, including the human voice, are fragmentary to a certain extent."

No other instrument so delights both the highly cultivated sense of musicians and the natural, untrained musical taste of the great majority ; none other completely satisfies the demands of the most skilful and at the same time yields such gratifying results to the beginner. It is suited to the largest concert hall or the cosiest home. It is adapted to all places and all occasions. It is the universal instrument.

The piano is an extremely interesting subject. Besides its musical superiority, the piano interests thoughtful people as a wonderful piece of mechanism. A whole library might be written about pianos. They have an ancient history and a romance of their own, about which a great deal has been written ; there are also scientific and technical treatises which only

PREFACE

an expert can comprehend; but so far as the author of this book is aware, no attempt has ever before been made to explain thoroughly all the modern and practical facts about pianos, which the public is most eager to learn, and which are the most interesting of all.

The incomplete and untrustworthy explanations given in piano catalogues furnish very little real information. They are generally written by persons who either lack expert knowledge of pianos, or only aim to make an argument in favor of some particular piano; consequently they are always unsatisfactory and misleading.

This book is believed to be the first book ever published covering the entire subject of pianos in a thoroughly practical and accurate way; explaining all its bearings clearly and completely in plain language which every one can understand, so that any intelligent person without previous knowledge of pianos may possess comprehensive, definite, correct information on every point of the subject.

This book includes everything of value and interest about pianos, such as practical experience and earnest study of the subject would suggest. The facts are presented in their proper order, carefully "boiled down," without any redundancy of words, and with all technical matters reduced to plain terms, intelligible to every reader.

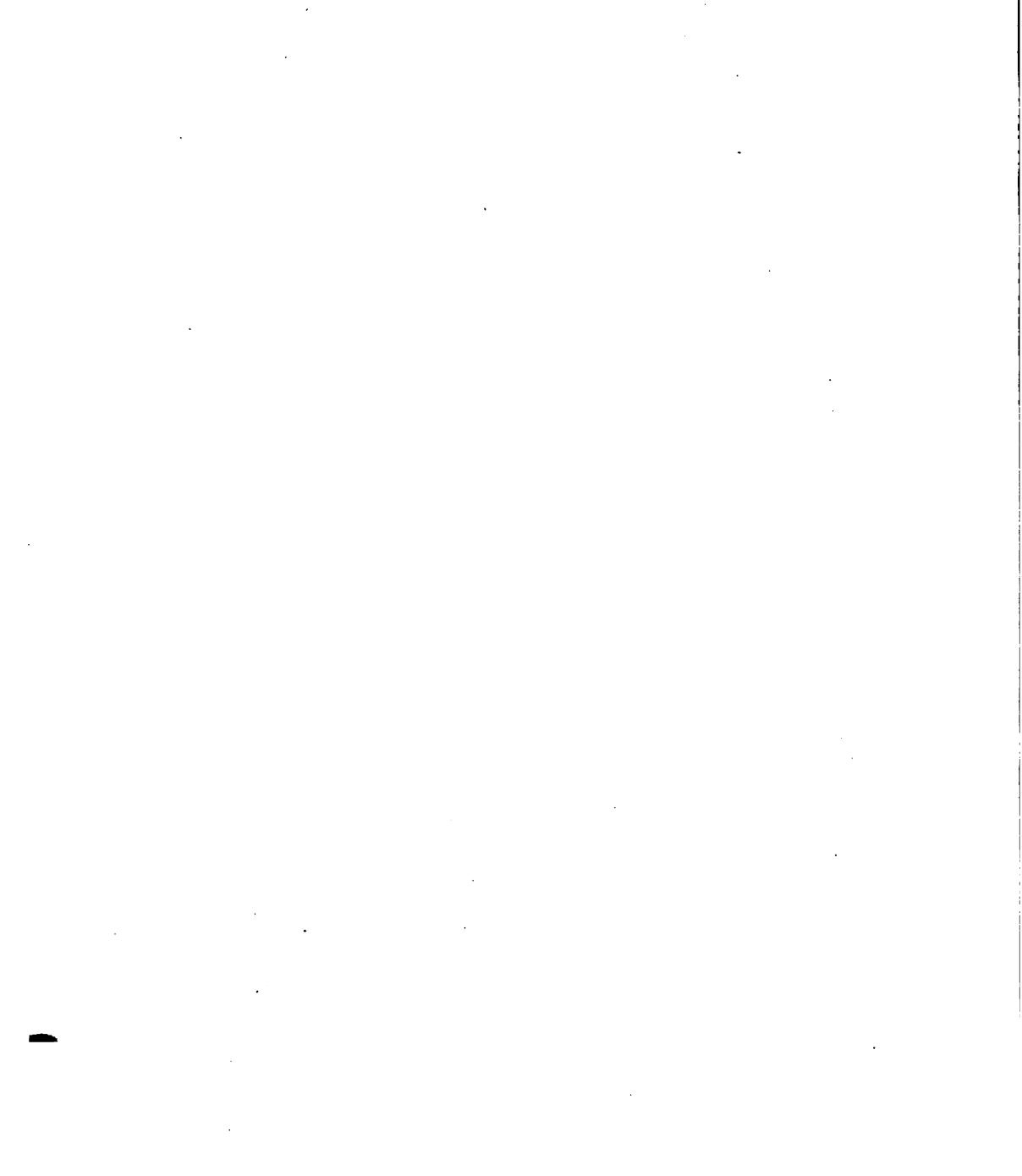
The early history of pianos is given in a comprehensive outline explaining their origin, invention, and foundation principles; and the gradual evolution of these principles as they are applied to the modern instrument is followed from step to step and carefully explained.

It is believed that the book will be interesting and instructive to an extremely wide circle of readers—first, to the general public, which consists so largely of those who either have a piano or expect to have one; and also to musicians, music teachers, and piano dealers, whose profes-

PREFACE

sional knowledge is often limited to the few desultory and misleading notions which they are able to pick up in the course of their business.

Those who are immediately concerned in an intelligent understanding of pianos will welcome a book which thoroughly and impartially informs them of the actual facts of the subject, thus rendering them entirely competent to form their own conclusions and exercise their own judgment. It is hoped that this book will be interesting reading and an unqualified benefit to every reader.



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ANCIENT ORIGIN OF THE PIANO

THIRTY centuries before Christ the Egyptians are said to have produced music by a long thin box with one string stretched over a movable bridge. This musical idea was, over twenty centuries later, in the sixth century B.C., used by the Greeks in their monochord, which is generally supposed to have been invented by Pythagoras. This was used in the church for ten centuries after Christ to teach singers the "eight tones."

From this crude invention, in time was developed the group of instruments known in the Middle Ages under the different names of psalter, harpsichord, clavicymbalum, clavictherum, clavichord, virginal, spinet, dulcimer. Most of these were probably known in the fourteenth century, and some of them earlier. Some of these are mentioned in "The Rules of the Minnesingers," published in 1404. The spinet is thought to have been invented in the sixteenth century by a Venetian named Spinetti.

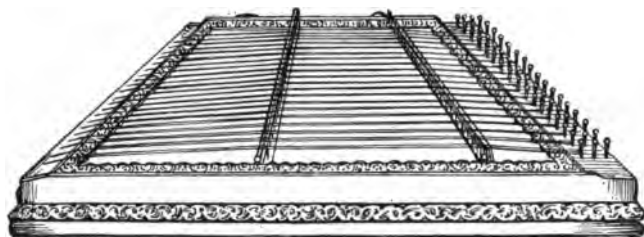
The Italians named one form of psalter "*Strumento di Porco*," meaning "pig's head," from its peculiar shape. The Germans translated this into "Schweinskopf," and named the dulcimer "Hackbrett" because it was played on like a butcher's block.

All these were stringed instruments. The clavichord had keys operating points of quill or hard leather which rose and "plucked" the strings. In all except the dulcimer the strings were set in vibration by twitching or plucking them. But in the dulcimer, which was a small instrument laid on a table, the strings were struck by leather-headed hammers held in the hands.

THE BOOK OF COMPLETE

THE FIRST PIANO

In 1711, in Florence, Italy, B. Christofori, or "Christofale," combined this hammer idea of the dulcimer with the keyboard idea of the clavichord into an instrument which had keys, which "see-sawed" on a pivot, with knobs on the other ends for hammers. These knob-hammers remained held against the strings as long as the keys were pressed. But afterward he made an improvement: an "escapement," which allowed the hammers



DULCIMER

to drop back after striking the strings; and a damper, to stop the vibrations. This instrument was the first piano.

It was oblong, similar in shape to and about one-half

as large as the old-fashioned square piano. The hammers were small and flat; the "natural" keys black and the "sharps" white. It was at first called a clavichord-cymballum with *forte* and *piano* (from the Italian words, *forte*, "loud," and *piano*, "soft"), referring to its capacity for yielding either a loud or soft tone, according to the force with which the keys were struck. The instrument soon became identified by these terms and known as the *fortepiano*. The words afterwards became reversed.

INFORMATION ABOUT PIANOS

EARLY ATTEMPTS

Marius of Paris in 1716 presented piano models to the Royal Academy. He probably did not get his ideas from Cristofori, but was probably the second independent inventor of the piano. Gottlieb Schroedter, of Germany, about the same time independently invented a similar instrument. His ideas were greatly improved upon by Gottfried Silberman, who made the first "wing-shaped" or "grand" piano.

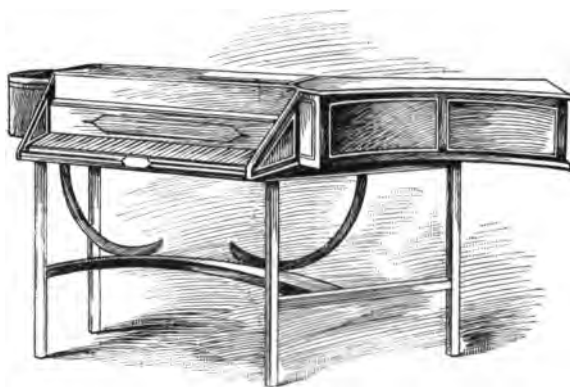
Johann Sebastian Bach, the great composer, played on a Silberman piano in 1737.

Notable improvements were made by Johann Stein and Anton Walter. Mozart played on both these makes. Stein's daughter, afterwards

Madame Streicker, made pianos upon which Beethoven played. One of Beethoven's Streicker pianos can now be seen at Windsor Castle.

In 1766 Silberman pianos were introduced into England. A Covent Garden theatre programme of the following year announced "A favorite song accompanied by Mr. Dibdin on a new instrument called Pianoforte."

In 1784 John Jacob Astor, of New York, imported from London the first pianos known in America. They were small, four and one-half to



THE BOOK OF COMPLETE

five octaves, square pianos, with eight legs. The few imported pianos used in America at that time could not stand the severe climate of this country, and were speedily ruined.

THE FIRST UPRIGHT

The first successful attempt at building American pianos was made in Philadelphia about 1790 by an American named John Hawkins, who first conceived the idea of upright pianos.

President Jefferson, in a letter to his daughter at Monticello in 1800, writes: "A poor, modest, but ingenious young man in Philadelphia has invented one of the prettiest improvements in the fortepiano I have ever seen. His strings are perpendicular, and he contrives within that height to give his strings the same length as in the grand fortepiano." This antedates by four years the claim of Broadwood and other English makers.

Not until 1815 was piano-making taken up as an American industry. Until 1830 all pianos were from four and one-half to six octaves, none more.

In 1833 was exhibited the first piano with a full cast-metal frame.

In 1840 the first American "grand" piano was made.

In 1844 and 1845 a French pianist travelled through the United States, giving concerts and selling French upright pianos, which, being from wood alone, within a few years succumbed to the climate and became total wrecks. This, although it had nothing to do with the shape of the instrument, caused a deep-rooted prejudice against upright pianos.

In 1855 was constructed the first overstrung piano—that is, with bass strings obliquely across over all the other strings. This was a square piano, as were nearly all pianos made in America up to that date.

All of these old-fashioned pianos were entitled to be called pianos

INFORMATION ABOUT PIANOS

because of the principle on which they were constructed; but they were no more to be compared to a modern piano than a birch-bark canoe is to the latest American battle-ship.

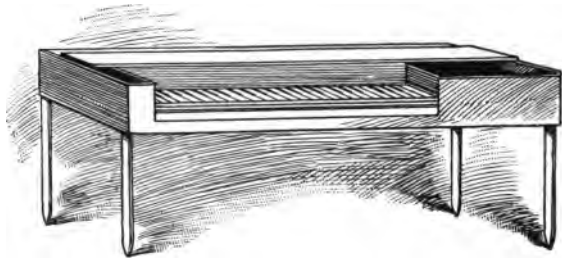
The history of modern piano-making is crowded into the last thirty years, and it is only within the present generation that the greatest improvements and perfections have been achieved which now give this instrument its peculiar quality and preëminence.

OVERSTRUNG UPRIGHTS

In 1867 the first overstrung upright pianos were exhibited by an American manufacturer in the International Paris Exposition. Even young people to-day can remember when upright pianos were an actual novelty; yet they were the most radical departure and the most valuable practical invention in the entire history of pianos.

For a long time many people looked upon them distrustfully, but experience has shown that they have distinct advantages, and in spite of prejudice, they have now completely superseded "squares."

In 1866 fully ninety-seven per cent. of all pianos made in the United States were square pianos; to-day less than one per cent. of all the pianos made are "squares"; four per cent. are "grands," and ninety-five per cent. are "uprights."



CLAVICHORD

THE BOOK OF COMPLETE

COMPARATIVE MERITS OF GRAND, SQUARE, AND UPRIGHT PIANOS

Piano-makers have had no incentive for improvement in square pianos, and there has not been an improvement in them for fifteen years. Undoubtedly their day is past. There is no longer any question of the decided superiority of upright pianos. Their more convenient shape has made them so popular that makers have exerted themselves to improve them in every possible way. One notable improvement is in the stringing arrangement which uses three wires to each note in the middle and treble registers, thus securing a much more powerful tone in proportion to the size of the instrument than in the old-fashioned square pianos.

Upright pianos are not excelled in quality of tone even by "grand" pianos. The sole advantage of this larger instrument is in size, which admits of longer strings, larger sound-board, and more powerful action, giving out a greater volume of sound. But in the home this greater power of tone is not an advantage. Even the smallest upright pianos have sufficient power of tone for home use, and nearly all have sufficient power of tone to fill any hall of ordinary size.

The upright piano is also of much more convenient size and shape than the grand piano. Thus both musical and practical advantages render the upright piano universally preferred.

INFORMATION ABOUT PIANOS

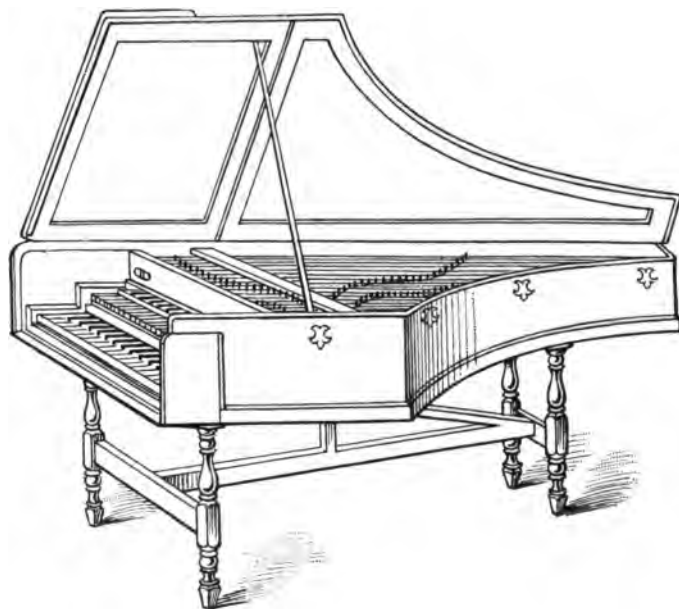
AMERICAN PIANOS

After 1815 the United States took the lead in piano improvements. No piano of foreign make has been publicly heard in the United States for nearly forty years, but many first-class American pianos are used in the art centres of Europe by the greatest artists.

The best pianos in the world are made in this country, and probably, also, the worst. America now leads also in quantity of output, producing annually about one hundred thousand pianos. New York heads the list with an output of about forty thousand per year.

There are some two hundred piano manufacturers in the United States, and each one of these makes a piano that is different from the others. A comparatively small number of

these make high-grade pianos, employing the very best workmen and using their experience and ability to produce the best piano they know how.



HARPSICHORD

THE BOOK OF COMPLETE

A very large number make what may be called a "commercial" piano. Some manufacturers aim at nothing artistic, and their pianos, though they may be good, have nothing special to recommend them—no special qualities of tone and action. There are also a number of absolutely bad pianos made. These are made by manufacturers whose sole aim is to produce a piano as cheaply as possible, using the cheapest materials, employing cheap workmen, and paying no more attention to tone, construction, or durability than is necessary for selling purposes.

It is impossible to manufacture a high-class piano unless the plan is mechanically perfect and unless the best materials and workmanship are employed. But besides this there is something else necessary. A great deal depends upon the personal fitness, ability, and experience of the manufacturer. This is the reason why there are essential differences even in the best pianos.

THE TONE

The tone of a piano is produced by the hammers striking the strings and putting them into vibration; this vibration is the tone. The strings pass over a narrow strip of wood, called the "bridge." It rests upon the sounding-board and communicates the vibrations to it. The sounding-board repeats, resonates, and echoes these vibrations, rendering them longer, increasing their volume, and adding to the fulness and resonance with which they reach the ear. The power of the tone depends upon the length and diameter of the strings, the size and quality of the sounding-board, and the force with which the hammers strike the strings.

When the string is struck by the hammer, it vibrates along its length in waves called "nodes." A magnified image of a vibrating string shown

INFORMATION ABOUT PIANOS

upon a screen makes these waves apparent to the eye. The top or bottom of a wave is called a nodal point. If the hammer strikes the string exactly at a nodal point, it will vibrate more freely than if struck at an intermediate point. If a string be struck at any part of its length which is not a nodal point, there will not be complete freedom of vibration, and the tone will not be so clear and distinct.

The more freely the strings vibrate, the more prolonged and continued the tone will be. This prolonged, sustained character of tone is known as "singing quality."

The strings of the treble notes are shorter and shorter toward the upper end of the piano, and as they are thin and very tightly strung, they necessarily vibrate less freely than the longer strings, and tend to produce a tone less prolonged, with more and more of a sharp metallic "clink" in the very highest notes. In the bass register, on the contrary, the heaviest and longest strings tend to produce a harsh, indistinct tone in the extreme low notes. These tendencies are partly offset by graduating the weight of the hammers and the thickness of the sounding-board in different parts under the different strings.



THE ACTION

The action of a piano is the mechanism which produces and controls the strokes of the hammers against the strings.

The importance of a piano's action comes next to its tone and endurance. A musician, in playing on any instrument, should give all his mind to the expression of the music. He does not want his attention distracted by having to overcome any weight or resistance. In playing a piano the

THE BOOK OF COMPLETE

player does not want to be hampered or distracted by any thought of the mechanism by which the music is produced.

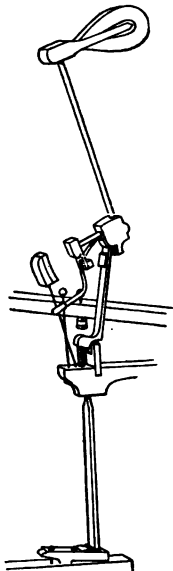
The action must be so delicately balanced and adjusted as to give perfect and instantaneous expression to the player's musical ideas. If the action is stiff or slow in responding to the touch it is a decided hindrance and will, to a certain extent, defeat the most skilful fingering. The action must be sensitive to the lightest fingering, yet it must not be loose-jointed or weak; it must be firm and elastic under the most vigorous touch.

A detailed technical diagram of an upright piano action. It shows a hammer flange at the top, connected by a hammer butt to a hammer flapper. The hammer flapper is pivoted on a hammer flapper pin. Below it is the hammer flinger, which is also pivoted. A hammer check is shown as a small rectangular piece that can engage with the hammer flange to stop its upward motion. The entire assembly is mounted on a base plate. Labels include "UPRIGHT PIANO ACTION" at the bottom left.

The earliest idea of an action (as in the clavichord) was a simple “see-saw.” A key hung upon a pivot and canted against the strings. The first improvement was an “escapement,” which permitted the hammer, after striking the string, to escape or fall away, although the finger was still pressed upon the key. In the next important improvement the axis of the hammer was made to change its position, making the touch extremely light. The latest radical improvement was the “double repeating action” invented by Erard of Paris in 1821, which is so responsive

to the most rapid fingering that when a key is pressed repeatedly in quick succession without the finger being taken from the key between the pressures, the hammer goes independently through the entire operation of striking the string and springing back into place with every pressure. Such rapidity of automatic action is hardly excelled by any other purely mechanical invention. It is almost as instantaneous as the human nervous system. The action may well be called the piano's nervous system.

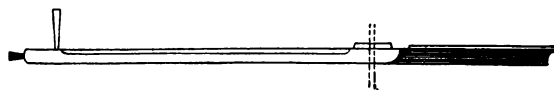
The manufacture and adjustment of this mechanism involve an enor-



**UPRIGHT
PIANO ACTION**

INFORMATION ABOUT PIANOS

mous amount of minute detail. The action of a single key and hammer in an upright piano consists of nearly



CLAVICHORD KEY

one hundred separate pieces of ivory, wood, metal, wire, leather, cloth, and felt, which must be selected, shaped, and fitted to each other with absolute exactness and uniformity.

THE PARTS OF A PIANO.—MATERIALS, ETC.

Selecting and preparing the various materials used in pianos is a most important branch of the science of piano-making, requiring experience and judgment, beside unlimited care and painstaking.

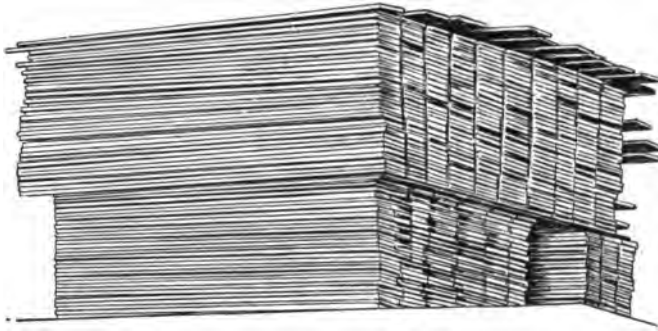
The material make-up of a piano must fulfil strangely diverse requirements. Some parts must be tremendously strong, but not an ounce too heavy. The whole instrument must vibrate and echo with music, but must not give out the least whisper of noise. Some parts must make the music; others must suppress it. The highest degree of resonance is demanded in some of the materials, and in others extremest acoustical dulness and deadness are necessary. Every particle of material must be selected with regard to its natural ingrained quality and capacity for its special service. Nothing but felt will do for the hammers, and nothing but spruce for the sound-board.

The severe extremes of United States climate are peculiarly trying to the finer woods and other fabrics used in pianos. It has been said that while it is difficult to make a piano at all, it is specially difficult to make one that will stand in America. A piano-maker must understand both the

THE BOOK OF COMPLETE

original nature of the materials he uses and also their tendency to change under variations of temperature.

The most important materials used in pianos are wood, iron, steel, and felt. Wood is used more generally and in greater variety than any other material. Each part in which wood is used needs its own particular kind and quality. The forests of the world have been searched



"WEATHER SEASONING"

for woods best adapted to the different parts of the instrument.

The timber used in the best pianos receives two years' seasoning at least. After being "weather-seasoned" in a large yard, it is transferred to the steam-drying house, where it remains subjected to a high temperature for three months. The wood has then become "bone-dry," and has lost nearly all the warp that was in it. The temperature may change fifty degrees in twelve hours (as it does in New York) without seriously affecting the fibre. Besides this, the timber is sawed in such a manner as to neutralize its tendency to warp, twist, or split.

METAL

The plate is made of iron metal, which is cast after a certain pattern corresponding with the size and shape of the framework of the piano.

INFORMATION ABOUT PIANOS

The plate, when finished and ready for use in the piano, must have no air-bubbles or blow-holes, as these weaken the plate; and will not have them if the metal has been properly treated while in process of manufacture. It must also be free from such impurities as sulphur and phosphorus, which make the metal brittle and likely to crack.

Steel for the strings is selected for its vibrating or elastic quality and for great tensile strength. Phosphorus and sulphur are found in steel as well as in iron. Phosphorus is specially to be feared in steel, and is removed from the ore, with sulphur and similar elements, by subjecting it to a special process while in course of manufacture.

FELT, GLUE, ETC.

One of the most important materials used in pianos is the hammer-felt. Its quality has a great influence on the piano's tone. It requires an expert to select the best qualities of felt. (See under "Hammers.")

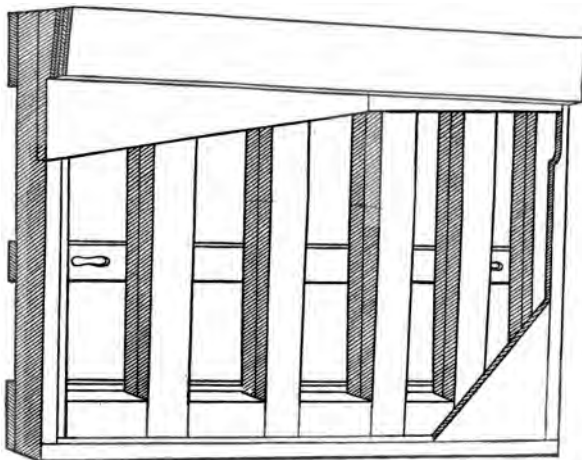
Glue is used for fastening different parts of the action; the framework of the piano; different parts of the case, as the veneer to the foundation wood; the different sections of the sounding-board; and the keys and the bracing. In the action white glues are used for the sake of appearance.

Cloth is used for lining certain pivot bearings and for intertwining between the silent ends of strings to prevent them from rattling and in other places to prevent noise. Elkskin, buckskin, and morocco are used in various parts of the action to render friction noiseless and to resist wear. Bronze, japan, and gold leaf are used for ornamenting the plate.

THE PARTS OF A PIANO

THE FRAMEWORK OR FOUNDATION

The great strain of a piano's strings necessitates a very strong, stiff framework to begin with. This framework in an upright piano is at the



THE FRAME

back. It consists of six upright wooden stanchions, generally three or four inches in thickness and of the height of the piano. These upright stanchions are braced by horizontal pieces set in between each upright. The horizontal pieces are to give stiffness enough to hold the uprights in position. It is the uprights that receive and

bear the strain, as the strain of the strings is not across the piano, but transversely up and down.

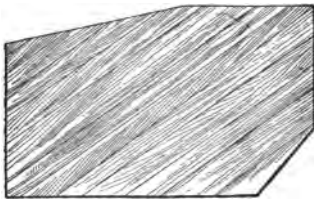
In selecting the wood for the frame, tensile strength is the first consideration—that is, its ability to stand a very heavy continuous strain without breaking. It must also not be liable to “season check”—that is, split

INFORMATION ABOUT PIANOS

along the grain—and it must be as light as possible, consistent with the necessary amount of strength. The woods which best fulfil these requirements are chestnut, ash, spruce, and pine, and consequently these are most often used.

WREST-PLANK OR PIN-BLOCK

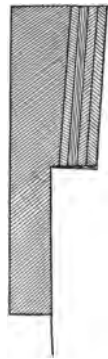
The wrest-plank is made up of several layers of timber glued together in the shape of a plank about four inches thick and about a foot wide, and is glued and bolted across the upper front of the frame. The wrest-plank holds the tuning-pins, which in turn hold the strings.



SOUND-BOARD

SOUND-BOARD

The sound-board is composed of narrow boards glued together edge to edge, and held together by ribs glued across the back. The ribs are glued across the back so as to make one thin clear sheet of



WREST-PLANK

spruce extending across the entire width of the piano and from the edge of the wrest-plank above, down to the bottom of the frame.

This construction gives greater strength and stiffness than a single thin board would have; and yet the pieces are so firmly glued together that the sound-board vibrates as if it were one large sheet.

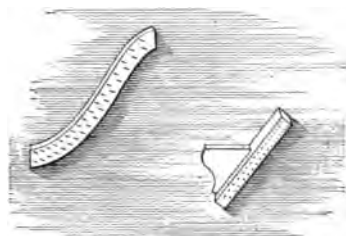
WOOD FOR THE SOUND-BOARD

The sound-board is more closely associated with the production and quality of the tone than any other part of the piano except the strings and

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the hammers. Even their force and vibration, however perfect, would be weak and only partially audible unless reinforced by the echoing resonance of the sound-board.

Almost every resonant substance in nature has at one time or another been tried for piano sound-boards. All woods have been tried, but nothing has been found equal to spruce. It is the most resonant wood known, providing it is perfectly dry. If not free from moisture, its resonant qualities will be impaired, and the tone will be in some degree deadened.



BRIDGES ON SOUND-BOARD

There are a hundred varieties of spruce, and, according to the geography of its growth—whether it be in high or low altitudes, in swampy or solid soil—each of the hundred specimens yields a distinctly different quality of tone.

To the maker of cheap pianos “spruce is spruce,” but to a maker of fine pianos a careful selection is of great importance.

The time of felling the trees and of cutting the timbers, the length of “weather seasoning” and of indoor seasoning, and the amount of sap and “imprisoned amber” that may be contained in the wood—all affect its natural resonance.

THE SOUND-BOARD BRIDGE

The bridge is a strip of maple wood about two inches wide and an inch and a half thick, glued to the lower part of the sound-board and running in such a direction that all the strings will pass over it near their lower ends. In upright pianos the bridge is divided into two entirely separate sections, because the bass strings run in a different direction from the

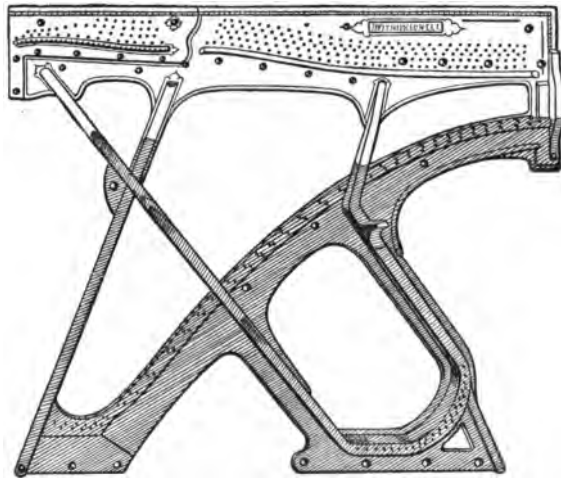
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others. One section of the bridge is for the bass strings (this section of the bridge is nearly straight); the other section is curved, and intersects the middle and treble strings. The strings are stretched tightly across and over the bridge, which communicates their vibrations to the sound-board.

THE METAL PLATE

The plate is a metal frame extending across the entire width and height of the piano, over the wrest-plank and sound-board, and fastened at the edges into the wooden frame at the back of the piano. The plate helps to stiffen the wooden framework against the strain of the strings and to give general support and stiffness.

At the upper part where it covers the wrest-plank it is a solid metal plate, but below that it is an open, irregular framework which leaves a large surface of the sound-board uncovered. Into the plate are driven small pins called "hitch-pins," so called because the lower ends of the strings are fastened or hitched to these pins.



THE PLATE

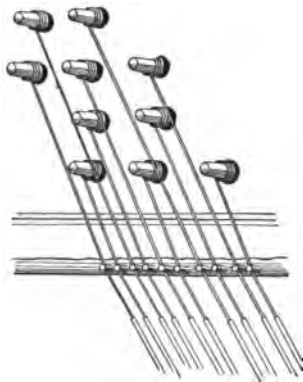
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STRINGS



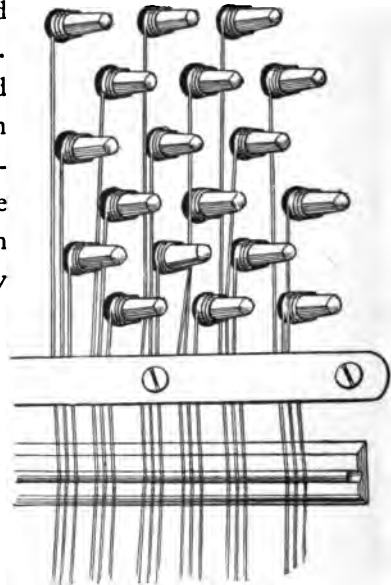
SHOWING ONE STRING TO EACH
NOTE (BASS REGISTER)

the bass register. Every string, while possessing the greatest strength, must also be elastic so as to vibrate freely and give forth a pure tone. They must also be properly



SHOWING TWO STRINGS TO EACH
NOTE (UPPER BASE REGISTER)

The strings are more concerned in producing the tone than any other part of the mechanism. The strings alone produce the tone; the sound-board only resonates. The strings are of steel, and some are wound with copper. These wound strings are in



SHOWING THREE STRINGS TO EACH NOTE
(TREBLE REGISTER)

tempered so as not to be likely to break under the great strain they are subjected to. There are three strings to each note in the

treble and middle register ; two in the upper base register of the piano, and one in the base register. The total number of strings in a modern upright

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piano of seven and one-third octaves is about two hundred and twenty-five. It is estimated that the "pull" of the strings is equal to a strain of twenty tons.

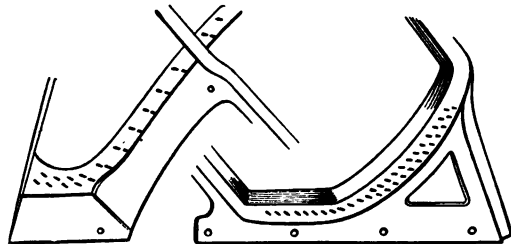
STEEL FOR THE STRINGS

All the strings for a piano are of steel wire. Steel is used for the covered bass strings as well as the strings in the middle and treble registers. The difference is that in the bass they are wound with copper and steel. The reason for covering the strings is to weight them, which lowers the pitch as effectively as if the strings were lengthened.

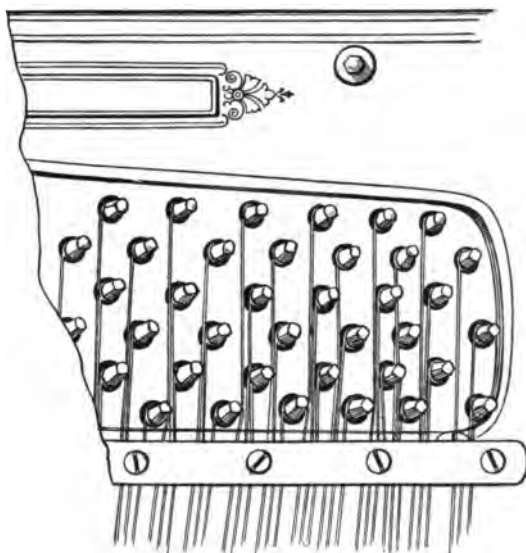
Formerly all piano-strings came from England, Germany, and France, but they are now also made in the United States.

TEMPERING THE STRINGS

A very important part in the manufacture of strings is tempering them. "Tempering" is heating the strings until they assume a peculiar shade of red or white, and then plunging them into oil, by which means the string is hardened and rendered more elastic. The harder and more elastic it is, the greater the vibratory capacity. It is generally known that a better tone is obtained from hard and elastic bodies than from those which are soft and inelastic.



HITCH-PINS IN PLATE



TUNING-PINS

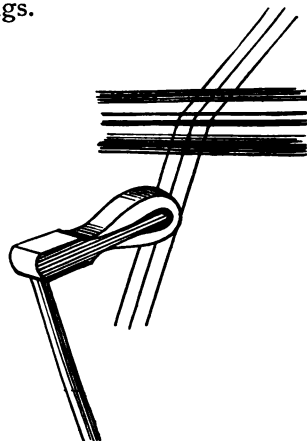
TUNING-PINS AND HITCH-PINS

The tuning-pins are screwed into holes drilled into the wrest-plank. They hold the upper ends of the strings and can be turned by the tuning-hammer so as to loosen or tighten them. This is what the tuner does in tuning the piano. He tightens or loosens the string according to whether the note is flat or sharp. The hitch-pins are driven into the plate and hold the lower ends of the strings.

HAMMERS

The hammer is the part which strikes the string and puts it in vibration, this producing the tone. The damper "damps," or stops the string from continued vibrating.

The hammers are shaped as their name implies. Their stems are of maple or cedar, about the thickness of an ordinary lead-pencil. The heads of the hammers are of wood, thickly covered on the striking surface with layers of felt.

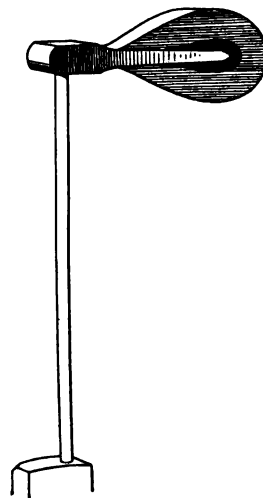


HAMMER STRIKING NOTE

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FELT FOR THE HAMMERS

Felt is used in preference to any other material because it gives a much better tone than anything else that can be used. In the earlier history of pianos various substances were used for hammers, such as wood, bone, and leather. Buckskin was formerly employed for covering the hammers of square pianos, but, besides giving forth an inferior quality of tone, it has to be put on in layers because it is thin, and these are liable to become unglued, as the surface of the buckskin is hard and does not take the glue readily. Felt hammers are now universally used in all pianos.



HAMMER

HOW FELT IS MADE

Felt is made of wool fibres which are matted together. The felting process is as follows: The wool fibres are cleaned from animal grease by washing with chemicals and with water. They are then dried. Each fibre has microscopic projections along its length like barbs of wheat, so that when a number of fibres are placed together and pressure is put on them the tendency is to interlace.

The fibres, after being washed and dried, are put on the felting machines and beaten with a beater until felted—that is, until the fibres adhere to each other in a solid mass. The more they are beaten the harder the felt will be. If soft felt is wanted they are not beaten so much. Felt used

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for piano hammers is made very hard, and afterwards softened to the proper degree of elasticity.

There are two layers of felt on the hammer. The under layer is very hard, almost as hard as the wood which composes the hammer head, so that it forms a sort of intermediate cushion between the extreme hardness of the hammer head and the softness of the outer layer of felt. This is always much softer than that which is underneath.

European wool is finer than American, owing to the milder climate of Europe. While finer, it is at the same time stronger. Foreign sheep will not produce the same grades of wool if imported here; just as tobacco, if sent from Havana and planted in Connecticut, will not yield a plant equal in flavor to the original Havana.

American wool is harder and more wiry; consequently it will interlace easier—that is, become felted easier, and so when made up into hammers it will harden more easily, and therefore is less desirable for that purpose.

The best hammer-felt is made in Germany, and it is very expensive.

“SHODDY” FELT

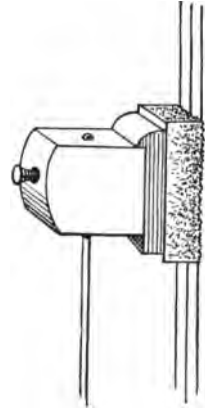
Cotton “shoddy” is sometimes put in with the wool for felt as it is in woven fabrics. The objection to cotton in felt is that it will be cut by the strings, while the wool will wear. Wool will be pounded down and hardened, but will not be cut. Also, cotton does not “felt” or interlace with the wool fibres. It is simply held in bodily by the wool fibres. There is consequently lack of firmness, so that a hammer made from felt which is not composed of all wool will not give as solid a blow. The felt will be yielding and not so compact as if it were of all wool.

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DAMPERS

The dampers are for damping, or cutting off the tone. They do this by pressing against the strings and stopping the strings from vibrating. The dampers are made of felt very much softer than the hammer-felt.

When the keys are at rest, untouched, the hammers are leaning away from the strings, but the dampers are leaning against them about two inches below the hammers. When a key is pressed it draws the damper away from the string and propels the hammer against it. The hammer strikes and falls back to its place away from the string, and the damper remains held away from the string as long as the finger is pressed on the key. When the finger is lifted the damper falls against the string and remains there until raised again.



DAMPER

DAMPER-FELT

The same material is used for dampers as for hammers, yet the effect to be produced is exactly opposite. The hammer actuates the tone. The damper, as its name indicates, “damps” it or cuts it off. Consequently the felt for dampers must be of an entirely different degree of hardness from that used for the hammers. Wool for this purpose is specially selected for its fineness, and it is, besides, not felted so hard as the wool for the hammers. If hard felt were used it would harden more, and when the damper touches the string its contact with the hard surface would

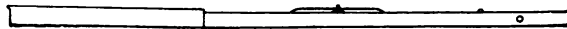
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give out a buzzing sound; so that it is as important that the proper quality of felt be used for the dampers as for the hammers.

KEYS

Each key is a lever by which the action is operated. The keys are hung on pivots. Behind the points where they are pivoted, leads are inserted to weight the key and cause it to drop back to its normal position when the finger is taken away.

The keys themselves are made of very light wood, as the keys are so thin and work so closely together that it is essential they be made of a wood which does not warp or twist.



A KEY

KEY-TOPS

Ivory is used for the white key-tops because it has a richer appearance than any other material and is more pleasant to the touch, there being absolutely no friction between the finger and the ivory key; besides, it is known to retain a remarkable evenness of temperature in all seasons. It does not become so cold in the winter as to be uncomfortable, yet it is always cool, even in the warmest weather. It seems to be affected very little by changes of heat and cold.

The best ivory is that cut from the tusks of freshly killed elephants. This is expensive. Besides, only certain portions of the tusks can be utilized for piano keys. There are parts of the tusks which are not of the proper color, and which, for other reasons, are not suitable. They are used

INFORMATION ABOUT PIANOS

by the ivory workers to make smaller ornamental articles, the best part of the tusks always being reserved for piano keys. The more nearly white ivory is in color, the better its grade. It is never actually white, but possesses a peculiar ivory-white color of its own.

The slabs which form piano keys are polished very laboriously by hand to give them their beautiful gloss.

EBONY FOR BLACK KEY-TOPS

Ebony wood is used for black key-tops, and is laid on the white pine key just in the same manner as the ivory. Ebony veneers are not used, but solid wood. Ebony is preferred because it is very hard and the grain is close. Hence when polished it feels somewhat to the touch like ivory. Besides, it makes a very pleasant contrast of color with the white of the ivory keys.

MISCELLANEOUS PARTS

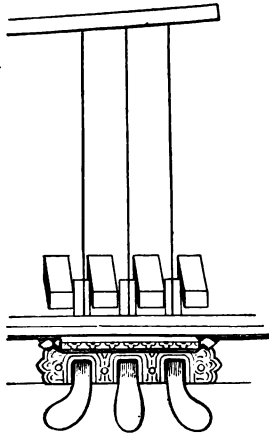
The *hammer shanks* or stems are made of light, straight-grained maple or cedar.

The “*blocking*” of a piano—that is, the parts which sustain the action mechanism, such as the action rail, etc.—should be of light woods, but such as will best resist all strain and compressions. Boxwood is generally preferred for a piano “*blocking*.”

Elkskin is used on the bottom of the hammer butts for the “*jacks*” to play against. It renders the friction noiseless, performing practically the same function as felt, besides the additional one of resisting wear. It has more strength than felt; hence it is used in preference where there is much friction to be overcome.

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Buckskin is used on the hammer heels to soften the noise of the heel falling against the back check.



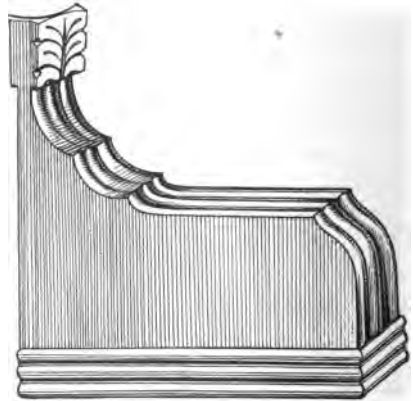
PEDALS

Morocco is used for bridle straps. There is considerable pressure on the strap when pulled, and it is fastened by a pin which, if the strap was not composed of some material capable of resisting strain, would tear through it.

PEDALS—LOUD AND SOFT

The operation of the loud pedal is to lift the dampers away from the strings so that the tone is more prolonged. It does not actually make the tone *louder*. This can only be done by striking the keys harder. The operation of the soft pedal is to push the entire row of hammers nearer to the strings, reducing the force of the blow, and thus rendering the tone softer.

The pedal action consists of two horizontal bars attached by rods, one to each pedal. At the end of each of these horizontal bars is a vertical one, which is connected above with the damper and hammer rails, this former being controlled by the loud, the latter by the soft pedal.



PART OF CASE—THE ARM

INFORMATION ABOUT PIANOS

THE CASE.—FOUNDATION AND VENEERS

The case of a piano consists of an inner "foundation" case of solid wood, over which are glued two successive layers or "veneers" of harder and handsomer wood.

Chestnut, cherry, ash, or white wood is used for the "foundation" of the case—that is, the wood over which the veneers are laid and to which they are glued. The advantage of these woods over others for this purpose is that they will hold the veneer when glued on—hold it firmly and solidly. Some woods cannot be used for this purpose because they do not hold the veneer firmly. When white wood is cut off for this purpose the tree is first quartered, because when cut in this way the wood is less liable to warp.

WHY VENEERS ARE USED

Piano cases are made of veneers because it has been found that this form of construction is stronger than to make the case of a single thickness of wood. It can be easily understood why this is so. When the case is double-veneered—that is, veneered with two thicknesses, both inside and outside—there are altogether five thicknesses of wood. The grain of each of these thicknesses runs in a different direction, and therefore each supports and strengthens the other. The whole is fastened together so firmly that it has the solidity of a single piece and the strength of five, and it is not likely to split or check as a single piece might do. It involves more labor to make a piano in this way with a double-veneered case than to make the case out of a single solid piece of wood, but the extra labor is more than justified by the increased durability.



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WOOD FOR THE VENEERS OF THE CASE

Burl walnut, Circassian walnut, mahogany, and oak are the woods principally used for piano-case veneering. Burl walnut and Circassian walnut are formed of the roots and excrescences of the walnut tree. The name "burl" indicates knots. Circassian walnut has a longer figure than burl. The colors are richer, and the contrasts of the different shades stronger and more varied.

PUTTING A PIANO TOGETHER.—THE SCALE

The plan upon which a maker constructs his piano is called his "scale." In the construction of the piano, "drawing the scale" is the first step—in other words, planning a piano as a house is planned; only the estimates for measurements in a piano are figured to the minutest fraction and with regard to every part of the instrument, inside and out. The least variation or mismeasurement, even so slight as to be imperceptible to any eye but an expert's, will make a great difference in the musical results.

The bass strings of a piano are so long that if they were strung parallel with the others, an upright piano would need to be, at the bass end, at least six feet high. In order to save this room all modern upright pianos are "overstrung"—that is, the bass strings are strung diagonally over but well above the strings of the middle register, so that the two sets of strings will never touch.

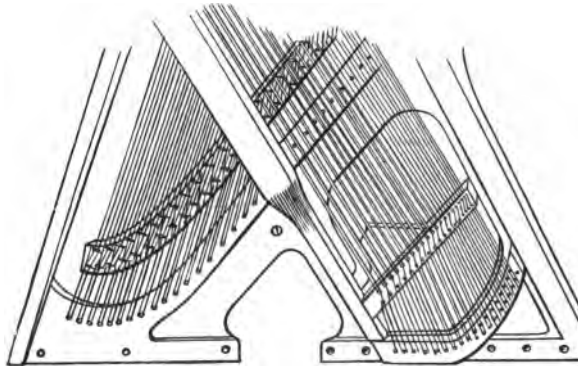
On account of the bass strings running in a different direction from the others, the "bridge" over which they are all stretched has to be separated into two sections lying at different angles, one section for the bass strings and one for the others.

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Because of this separation or "break" in the bridge, the tendency of the strings at this point is not to vibrate quite so freely as at other parts of the bridge; consequently there might be a slight deadness of tone where the two sections meet, or a slight difference or "break" in the quality of tone of the separate sections. This is overcome by careful calculation of the length and thickness of strings and thickness of sounding-board at this point.

JOINING THE FRAME

The first step in piano manufacture is making the framework, or wooden backing to the foundation on which the piano is constructed. The parts of this framework are glued together in preference to being joined in any other way. A glue joint will unite two pieces of wood together so solidly as to make them practically one piece. If breaking strength be applied to two pieces properly glued together, the break will probably occur at any other point than the point at which they are glued.



SHOWING "OVERSTRINGING"

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GLUING ON THE WREST-PLANK

The wrest-plank is next fastened to the front of the frame, at the top. For the reason just mentioned, the wrest-plank is also glued to the frame in preference to being screwed. To prepare frame and wrest-plank for being glued together, the joining surfaces are roughened with a tooth-plane, which cuts small ridges in the wood, causing it to "take" the glue more readily. Then both surfaces are heated, the glue being brought at the same time to the proper consistency, and made boiling hot. It is then applied plentifully to the joining surfaces, and they are brought together and power screw clamps applied, pressing them together with tremendous power. The glue and both surfaces of the wood being heated and the clamps in readiness to slip over them, no time is lost. The whole process does not take over a minute, and the two pieces are firmly united before the glue has a chance to get cool. They are allowed to remain clamped under pressure until the glue has become cold and dry. They can then be said to be practically one piece.

PUTTING ON THE SOUND-BOARD

Next after the wrest-plank the sound-board is placed in position, being fastened at its four edges to the frame. The sounding-board extends up to and touches the edge of the wrest-plank at the top and to the bottom and sides of the frame.

The sound-board is composed of narrow pieces of spruce glued together at their edges. After the boards are placed together and glued they are then planed as one piece and the board cut to the proper size.

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The narrower the pieces are which compose the sounding-board the better they will stand—that is, the less liability there is to warp and to come unglued from each other. The proper boards are narrow enough to be perfectly stiff and yet sufficiently wide so that the vibrations will not be interrupted by too numerous joints. The grain of each piece of sounding-board always runs lengthwise. This is because it is an advantage to have the fibres long so as to get a prolonged, sustained tone.

ATTACHING THE RIBS AND BRIDGES

Before the sounding-board is placed in position the ribs and the sections of the bridge are attached to it. The ribs are on the back, and are generally made of spruce. The ribs are placed in such a position that they run counter to the grain—that is, at right angles or across it. The number of ribs vary according to the scale of the piano and the size of the sounding-board. It is not well to have any more ribs on the back of the sounding-board than are absolutely necessary to obtain the required amount of strength and solidity.

FASTENING THE BRIDGE

The two sections of the bridge are attached to the front of the sounding board. When the bridge is glued, and while the glue is still hot and wet, several pieces of elastic wood are forced between the sounding-board and the ceiling. These are called “go-bars,” and act as clamps to hold the bridge in place while the glue is drying and hardening. The advantage of using go-bars instead of clamps is that for this particular purpose they exert a more uniform pressure, and consequently the glue joint is more solid. Go-bars are usually made of ash, as it is springy and elastic, although maple and hickory are also used.

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THE STRING BEARINGS ON THE BRIDGE

It is imperative that the bridge be solidly fastened at every point where it bears upon the sounding-board. If it become loose at any point and away from the sounding-board the vibration of the strings will not be fully communicated to the sounding-board, and the consequence will be loss of tone. There is a slight downward pressure on the bridge, although the pressure is neutralized by the arrangement of the pins, which are driven, one set at each side of the bridge, at an angle. The pins are driven into the bridge in such a way that the tendency of one of them is to bear upwards upon the string—that is, bear it away from the sounding-board; while the tendency of the other pin is just the opposite—viz.: to press the string down on the bridge and hold it more closely to the sounding-board. The pressure at the latter point is somewhat heavier than at the other; consequently there is a balance of pressure down upon the bridge.

The scientific theory is that if the bridge was not fastened at all to the sounding-board, it would be held in position by this mere pressure of the strings. The reason that the strings are not drawn straight over the bridge and allowed to press directly upon it without being engaged in this way with the pins, is that such an arrangement would not so effectually transmit their vibrations to the sounding-board. The strings must firmly press against the bridge in order to arrest the vibrations and communicate them to the sounding-board. If the strings rest too loosely on the bridge the vibrations will be only partly absorbed and transmitted, and the tone will consequently be weak when heavily played. The strings also being loose, will rattle against the bridge.

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HEIGHT OF THE BRIDGE

The height of the bridge from the sounding-board affects greatly the "singing" quality of the tone. The bridge must be so high that the strings pressing on it will have their vibrations communicated to the sounding-board. But if the bridge is too high and the strings press too heavily upon it, the free vibration of the sounding-board will be interfered with, and there will be consequent deadness of tone.

Before the strings are put on, cords are strung around the pins to give an idea of how the strings will bear. Then, with these as a guide, the bridge is planed to the required height, making it just high enough so that the strings will have a firm bearing and press with sufficient force upon the bridge. This is one of the "nicest" processes of piano-making—one of those for which a considerable amount of skill and care are required.

The bridge is divided into two sections, one for the bass, the other for the middle and upper registers. The section for the upper two registers is generally curved. The direction and length of the curves depend upon the scale. The bass section of the bridge is generally straight. The bridge is bevelled at the upper edges so that there will be no sharp corners to interfere with the vibrations of the strings.

MAKING THE PLATE

When the scale is drawn, a wooden pattern is made from the drawing, and from this pattern the iron plate is cast. In drawing the design accurate allowance for the shrinkage of *cast* iron in cooling must be made. This shrinkage amounts to one-eighth of an inch to the foot. If this is disregarded or not accurately calculated, the whole plan of the scale will be

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disproportioned and faulty. Careful estimate must also be made of the exact amount of strength required in the iron plate to bear such part of the strain as comes upon it. No more weight of iron must be added than is required for perfect security.

After the plate is cast the rough casting is brought from the foundry and placed under the drilling machine, which rapidly bores many holes of various sizes. Then it is smoothed and finished with a file; then japanned, and baked in an oven for twenty-four hours; then taken to the bronzer and gilder, who covers the greater part of the surface with yellow bronzing, and brightens it here and there with gilding. This latter process is for ornamental purposes.

BORING HOLES FOR THE TUNING-PINS

After the plate is put on, holes for the tuning-pins are then bored in the wrest-plank through other holes which have already been bored in the plate by the plate-makers. The plate holes are slightly larger than the diameter of the pins, to prevent the sides of the pins from pressing against the plate. In boring the holes in the wrest-plank the bit must be held perfectly true and straight so that it will cut cleanly and turn out a clean shaving and not splinter the edges of the holes. In the latter case the pins would not be held firmly.

HOLES FOR BRIDGE-PINS

The holes for the bridge-pins are bored in the same way as those for the tuning-pins. A much smaller bit is used because the pins are quite small in diameter. The holes are bored in at angles instead of straight.

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The pins in the bass are slightly thicker than those in the middle and treble registers. A hole must not be bored too deep, but only deep enough so that when the pin is driven in to the proper depth it will rest upon a solid bed of wood. Otherwise it would contribute to make the string bearing on it give forth a hollow and false tone.

After the holes are bored in the wrest-plank and bridge the pins are screwed in. An expert bellyman is the workman who puts on the plate and sounding-board, bores the holes in the bridge and wrest-plank, and arranges for the proper bearing of each string upon the bridge.

When the bridge-pins have been driven in, the tops are cut off with strong wire cutters and smoothly filed.

PUTTING ON THE STRINGS

The strings are now put on, being held by the hitch-pins at one end and the tuning-pins at the other. They are first cut the proper length. They must be long enough to allow a margin for coiling around the tuning-pins three or four coils. There is a hole in the tuning-pin into which the end of the string is inserted. The string is then held tight and the tuning-pin twisted until the string has been coiled around it three or four times.

In the bass of upright pianos the strings do not run in a direct line from the tuning-pins to the hitch-pins, and they are held in position by a subsidiary set of pins, which are driven into the plate by the plate-maker before it is put into the piano. These pins are driven into a narrow bridge of iron called the plate-rail, which is cast in the plate across the upper part, just below the tuning-pins, and are set at angles to the tuning-pins so as to give a bearing to the strings.

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"CHIPPING UP" THE STRINGS

After the strings are put on they are "chipped up"—that is, pulled up to approximate pitch. This is really a preliminary or rough tuning. There are no keys in the piano when this is done, so the strings are picked with a stick.

PARTIAL CASING

The ends of the case that are now glued on include the "arm" and "foot"—parts of the end of the case. The end of the case is glued to the framing. Clamps the entire width of the piano are used to press the parts well together. These clamps are allowed to remain, exerting a heavy pressure, for twenty-four hours.

The key bottom or bed is then attached to the under part of the arms by glue and screws. The key-bed is what the key-frame rests upon. The back part of the key-bottom rests upon lugs or supports cast with the iron plate. It is made of narrow strips cut quarterwise, and glued together in one continuous piece like the sound-board.

PUTTING IN THE ACTION

Next comes the putting in of the keys and action. The key is "fine-planed"—that is, planed so finely that there is no rubbing or friction between any of the keys.

On the bottom surface of each key, approximately at the centre, but really two-fifths from the back end, a hole is then bored to receive the pivot-pin. The keys are then placed beneath so that their top surfaces will be even.

After this, cloth and paper punchings are placed over the pivot-pins in

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the balance-rail, on which the keys balance. The object of this is to form a noiseless fulcrum for the keys to balance on. Punchings are also placed



ACTION-REGULATING

over front pins to form a noiseless bed for the keys to strike against. Elk or buck skin is fastened to the key-frame at the back for the back ends of the key to fall on, making a noiseless cushion.

REGULATING THE TOUCH

The touch should be light, but should not lack firmness. Shallowness of touch is due to the key not being allowed sufficient "fall." The proper depth of touch is in the treble register one-quarter inch, in the middle five-sixteenths, in the base a small fraction deeper.

Touch is influenced greatly by the key itself, which is hung upon a

THE BOOK OF COMPLETE INFORMATION ABOUT PIANOS

pivot, and leaded or weighted at the back to make the key resume its normal position after being struck. If these leads are too heavy, they act as a constant drag.

TUNING

After the action is put in, the piano is tuned again, and any string which has slipped or stretched after the first "rough" tuning is tightened up. This is a second rough tuning. There are two or three rough tunings and two fine tunings at least. Besides this, the piano is tried the last thing before it leaves the factory. Thus any stretching or loosening of strings or pins causing a falling off or "settling," as it is called, is corrected.

The fine tuning is done by an expert tuner, whose musical ear is not only naturally very keen, but is rendered still more acute by constant training. His tuning-fork gives the exact pitch for one string; from this he tunes the others according to a method which varies with different tuners. Piano-tuning is a science and profession of itself, and books are written on that one subject.

TONE-REGULATING

After the hammer-heads are covered with the proper quality of felt, the felt is pricked with fine needles. The object of this is to open up the fibres of the felt and make it soft.

A mellow tone is obtained by having the hammers soft and elastic. A brilliant tone is obtained by having the hammers harder.

FINAL CASE-FINISHING

After the tone-regulating comes the final finishing—fitting the front and top of the case and carefully polishing the entire surface. When this is done the piano is tuned, if necessary, and is ready for use.

PART II

1868—31ST YEAR—1899

CATALOGUE

THE WING PIANO



WING & SON, PIANO MANUFACTURERS

FACTORY AND OFFICES

202-204 EAST 12TH STREET, NEW YORK

ESTABLISHED 1868

OUR PURPOSE

The object of this book is to give as complete and perfect an idea of the Wing Piano as it is possible to give by written description and illustration. We consider that our very best recommendation of the Wing Piano is to tell exactly what it is made of and how it is made. There are a great many pianos to choose from, and we cannot expect a purchaser to buy the Wing Piano unless we show fully why it is superior to others.

THE WING PIANO

Our claim for the Wing Piano is that it leaves nothing to be desired in tone, action, workmanship, material, finish, and appearance. Our constant aim has been to make it as perfect a piano as possible. We have been manufacturing the Wing Piano for twenty-nine years. It is therefore natural that we should have confidence in it.

THE WING TONE

The one great object for which a piano is made is its tone. The Wing Piano possesses in the fullest degree the essential qualities of a perfect tone: *purity, sweetness, richness, power, singing quality, and evenness.*

THE WING PIANO

PURITY OF TONE

The tone is clear and free from "wooliness" and disagreeable overtones. It is bright and silvery in the upper notes of the treble, and in the bass, where the tone is usually dull and lifeless, every note is distinct and musical. This purity of tone gives the effect of brightness and sparkle.

SWEETNESS OF TONE

It is its sweetness that gives the tone of the Wing Piano its *pleasing* quality. A piano may have a loud, brilliant, and clear tone, but if it has not also *sweetness* one will tire of it in time. When two pianos seemingly equal to each other in all respects are being judged and one seems to please more than the other, it is usually because it possesses a greater sweetness of tone.

Sweetness of tone greatly depends upon the felt which covers the hammers. If this is too soft the tone will sound muffled and lifeless, while if the felt is too hard the tone will be harsh and metallic. The patent process of tone-regulating (see elsewhere) employed in the Wing Piano, renders the felt on the hammers uniformly soft and elastic, so that the tone, while having sweetness, is at the same time clear and *brilliant*.

RICHNESS OF TONE

The Wing tone has a rich, heavy, full quality. There is not a trace of weakness or thinness in any part of the scale. Even when the piano is only lightly played on, it gives the impression of having an abundant reserve of sweetness.

THE WING PIANO

POWER OF TONE

In loud passages it swells out, and is strong and sonorous, equal to the heaviest demands of classic music. There is absolutely no weakness or unevenness, no matter how heavily the piano is played on. The bass not only has great force and "body," but is very *resonant*.

SINGING QUALITY

The tone *sings* and *vibrates*. It is this vibrating quality which causes it to blend perfectly with the voice. The tones are prolonged and do not die out quickly; and are not short even in the treble notes. The tone of many pianos seems to be lifeless and heavy because they do not have this singing quality.

EVENNESS OF TONE

The different registers—the treble, middle, and bass registers—harmonize and blend with each other perfectly. The bass does not overpower the treble notes. The treble notes are as perfect, and have the same sweetness as those in the middle register. In many pianos the middle notes will be fairly good, but the treble will be weak and the bass very indistinct, giving a very uneven effect. The tone of the Wing Piano is clear and rich throughout all registers. There are no weaknesses in any part of the scale and no imperfect notes.

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THE WING ACTION

The Wing action is patterned after the perfected double-lever grand repeating action, to secure the greatest *strength* and *power*, and greatest *repeating qualities*.

Every key acts *instantaneously* and recovers promptly, ready for the *repeat*, so that after a note is played, the same note may be sounded again *immediately* without taking the finger from the key.

An important improvement of the Wing Piano action is the brass capstan screw (used in our two largest styles). It is by means of this screw that lost motion or looseness in the action is taken up. The advantages of the brass capstan screw are: first, it is very easy for the tuner to adjust; second, having few parts, it is not liable to get out of order easily; third, it cannot become loose, and therefore there is no possibility of rattling.

STRENGTH

In manufacturing the action of the Wing Piano our first consideration is *strength*. The action of a piano cannot be too strong or too substantially made, as no part of the piano receives as much use. If the action is made too light it will not wear. For the action of the Wing Piano we use the hardest woods, and every piece is tested for strength. All woods used in the action are seasoned for at least three years; they are perfectly dry, and can never swell or shrink. They have the hardness and dryness of bone, and will wear like iron. Swelling of the parts in the action causes it to work sluggishly and heavily. Shrinking of the

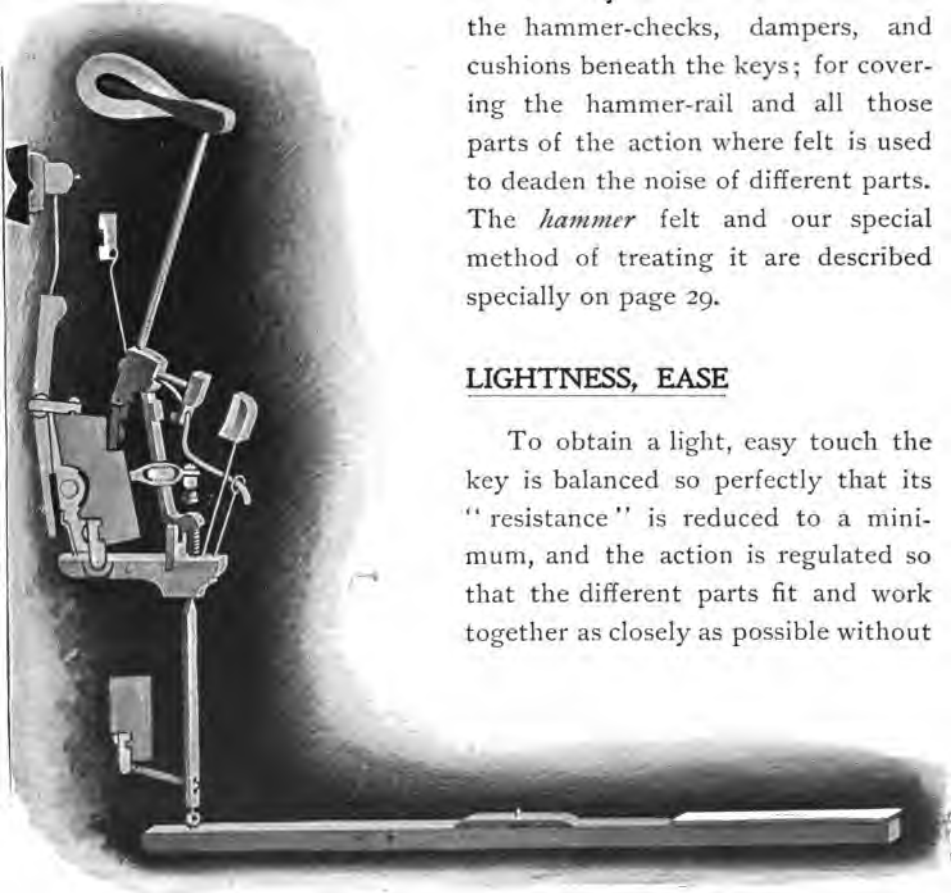
THE WING PIANO

parts causes the action to become loose and rattle, and makes the touch very disagreeable, lacking firmness and elasticity.

The very finest felts are used for the hammer-checks, dampers, and cushions beneath the keys; for covering the hammer-rail and all those parts of the action where felt is used to deaden the noise of different parts. The *hammer* felt and our special method of treating it are described specially on page 29.

LIGHTNESS, EASE

To obtain a light, easy touch the key is balanced so perfectly that its "resistance" is reduced to a minimum, and the action is regulated so that the different parts fit and work together as closely as possible without



THE WING DOUBLE-LEVER GRAND REPEATING ACTION WITH BRASS CAPSTAN SCREW CONNECTING ACTION AND KEY

THE WING PIANO

looseness or lost motion. This makes the touch of the keys elastic, springy, and *pleasant*.

INSTANTANEOUS

The lightest stroke on the keys causes the tone to be heard *instantly*. This is one of the most noticeable features in the Wing Piano action. When the action of a piano is stiff or sluggish—that is, when it does not act quickly—it is very disagreeable to the player, and with such an action it is impossible to play many pieces of music requiring *quick fingering*.

SPECIAL FEATURES OF ACTION CONSTRUCTION

The rails which support the action are made extra heavy and strong so as to prevent any possibility of *sagging*. It is necessary that the action should be held very *firmly*, and any sagging or bending will throw it out of adjustment.

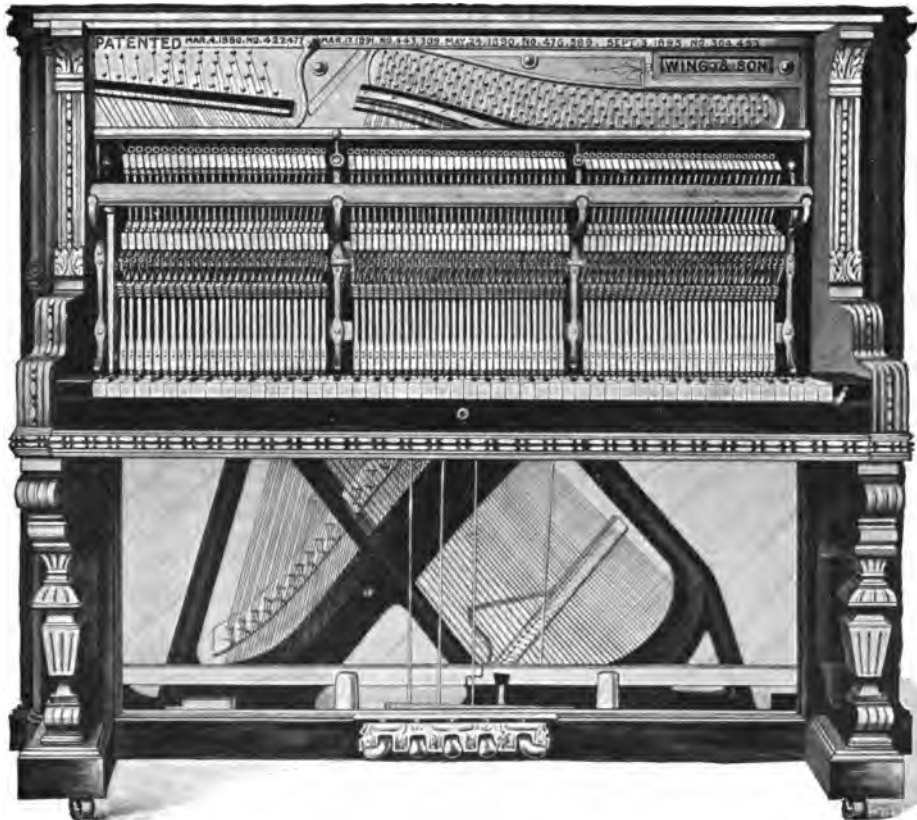
The *hammer-shanks* or stems are made extra strong. The hammer strikes the strings with much more force than would be supposed. The fault of broken hammer-shanks is very frequent in many pianos, and is usually due to their not being sufficiently strong.

The action is carefully regulated so as to secure the proper depth or “fall” of the key in each register, and the exact balance to bring the key back quickly to the position after being struck, but not so forcibly as to create any perceptible resistance to the touch. Every smallest part of the action mechanism between the keys and hammers is adjusted to work smoothly and closely so as to obtain firm, elastic, instantaneous action.

THE WING PIANO

THE WING PIANO SCALE

The scale of a piano determines whether or not the tone will be *powerful* or *weak*, whether it will be *evenly blended* throughout the keyboard, and whether or not it will possess *singing quality*.



SCALE OF THE WING PIANO, SHOWING SOUND-BOARD, BRIDGES, STRINGS, TUNING-PINS, METAL PLATE, ACTION, AND KEYS

THE WING PIANO

In laying out the scale of the Wing Piano the most accurate calculations and measurements are made so as to procure the most perfect result in tone, action, and durability. The following details are carefully considered:

- Size of framework (different parts).
- Size of sound-board and its thickness at different places.
- Position of the tuning-pins and bridge-pins.
- Length and diameter of the strings.
- Curves and heights of bridges.
- Shape of the metal plate.
- Thickness of the wrest-plank.
- Position of the action and striking points of the hammers.

Formerly grand pianos had an advantage over all upright pianos, being more powerful in tone on account of having longer strings. The Wing Piano scale is drawn after the pattern of the largest grand piano scale. Every Wing Piano has three strings to each note in the treble and middle registers. The bass is overstrung, and the bass strings are wound with copper and steel wire. *The scale being the same as in grand pianos, the strings are of the greatest length, thus giving the greatest power and volume of tone.*

MATERIALS, CONSTRUCTION, ETC., OF THE WING PIANO

In the construction of the Wing Piano we aim at greatest solidity and strength. To obtain these we use the very best materials obtainable. Every piece of wood and metal is examined and tested before being used,

THE WING PIANO

to see that it is free from flaws or defects of any kind. Where so much lumber is used the question of *seasoning* is very important. No lumber is used in the Wing Piano that has not been seasoned for at least two years. Woods for the action are seasoned not less than three years. This is so that they will be thoroughly dried out and will not swell or shrink. It is this swelling and shrinking of the wood caused by use of poor and imperfectly seasoned material that causes so much trouble in pianos by reason of the case veneers splitting, case joints drawing apart, action and keys swelling and refusing to work, etc., etc.

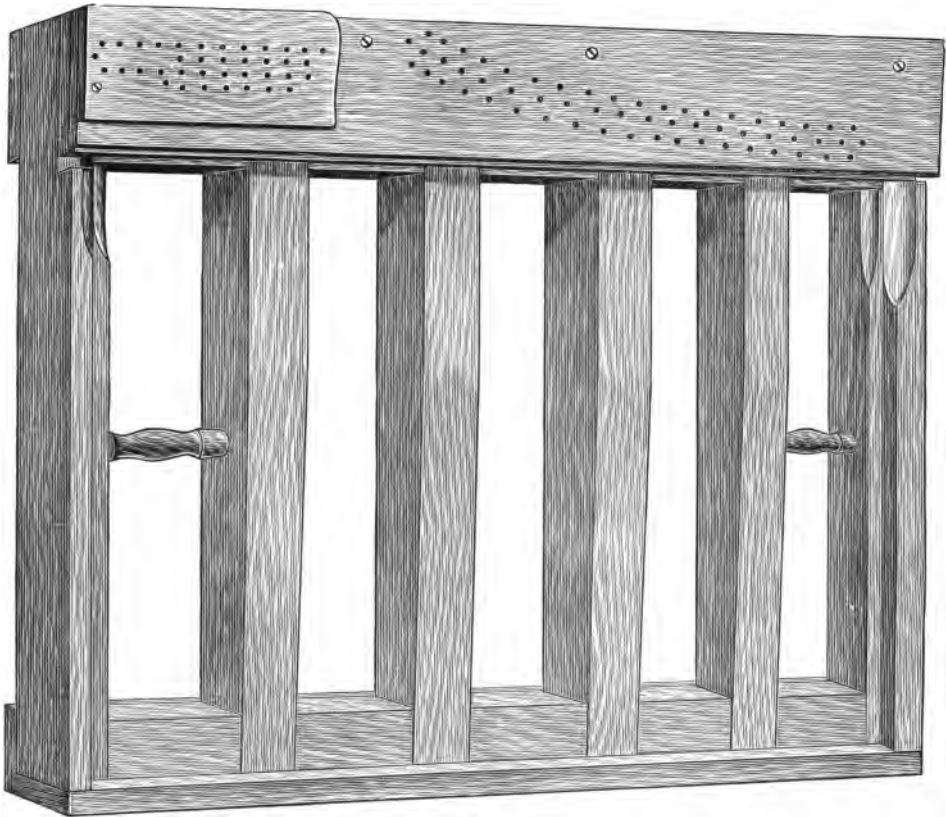
Glue is also a most important material, being used in nearly every part of the piano—the framework, wrest-plank, sound-board, case, and action. It is absolutely necessary that the glue shall knit the pieces which it holds together as firmly as if they were in one piece. If the glue is not strong the parts will tear away from each other. Cheap, adulterated glue has not the strength of that made of pure materials, and is easily softened by dampness. The glue must not only be strong and tenacious, but must be able to withstand the effect of moisture, and must not lack stability. The glues used in the Wing Piano are the very best that can be purchased.

We give in the following pages a description of the kind and quality of materials used in the different parts of the Wing Piano.

THE FRAME

The Wing frame is made of six upright stanchions 3 x 4 inches thick, and to increase its strength it is reinforced by horizontal cross-pieces of the same thickness (see illustration). The framework is made of spruce, pine, and ash. The frame is the foundation of the piano, and the strings

THE WING PIANO



WING PIANO FRAME, SHOWING WREST-PLANK (AT TOP) "BUILT UP" OF FOUR THICKNESSES
OF HARDEST ROCK MAPLE

exert a tremendous strain on it. It is estimated that the shortest and thinnest wire on an upright piano when tuned exerts a pull of two hundred and sixty pounds, and the total pull of all the strings together is a little less than twenty tons. This tension is kept up night and day from one year's end to another, and most of the strain comes upon the frame. Therefore the necessity for great strength and stiffness in this part of the

THE WING PIANO

piano. The woods used for this framework are selected because they possess great tensile strength and are not liable to split or season check; also because of their lightness and vibrating qualities. The parts of the frame—that is, the upright and horizontal pieces—are glued and fastened together so solidly that they are practically one piece.

WREST-PLANK

The Wing Piano wrest-plank, which holds the tuning-pins, is made of rock maple, grown in northern New York. It is glued to the front of the framework, at the top, and also fastened with heavy bolts passing through the plate, wrest-planks, and frame. There are four thicknesses, and they are *cross-banded*—that is, the grain of each layer runs in a different direction from that of the next. One of the most common causes of a piano getting out of tune is that the tuning-pins slip and turn around in the wrest-plank. The tuning-pins hold the strings; therefore when the pins slip, the strings become looser, and the piano is out of tune. If the wrest-plank can be made to hold the pins more firmly, so as to prevent them from slipping, the piano will be less liable to get out of tune. This form of wrest-plank construction prevents the pins from slipping, because there are four thicknesses of wood instead of one. The *end grain* of the wood comes against all sides of the tuning-pin, giving a firm bearing on every side, and as this end grain never wears smooth, it cannot loosen its firm grip, but holds the pin with the greatest possible security.

WOOD FOR THE WREST-PLANK

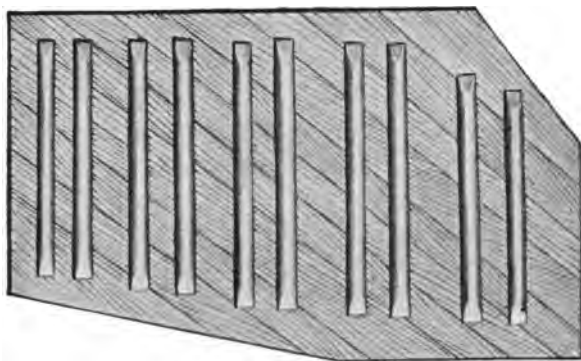
The wrest-plank is made of rock maple because that is the hardest variety of maple known, and holds the tuning-pins more securely than any

THE WING PIANO

other wood. The end grain of this wood grips the pins far more solidly than iron could do. All maple is not equally good for this purpose. Some varieties are hardly any better than soft woods, yet these inferior varieties of maple are sometimes used by manufacturers for the sake of cheapness. The use of several layers of wood, besides holding the pins more securely, makes the plank much stronger and less likely to split than if it were a single piece, as the different thicknesses of wood reinforce each other and thereby prevent warping and splitting.

SOUND-BOARD

The sound-board of the Wing Piano is made of the finest quality of selected spruce. It is selected for its hardness and its close, fine grain,



WING PIANO SOUND-BOARD (BACK VIEW), SHOWING REINFORCEMENT OF RIBS TO GIVE SOLIDITY AND STRENGTH

so that when thoroughly dried and seasoned, it will vibrate freely and give forth a clear, resonant, singing tone. It is because of lack of care in this respect that the tone of so many pianos sounds dull or "lifeless." The sound-board is glued and screwed, at its four edges, to the frame.

To further improve the vibrating qualities of the sound-board, the space which holds it is made slightly smaller than the board itself, so that when

THE WING PIANO

it is forced into this space the board bulges outward and is under a tension. This is according to the same principle as tightening the head of a drum. The drum gives a clearer, louder note when the skin on top is drawn tightly than when loose.

A great many pianos lose their tone after a few years' use because of shrinkage of the sound-board. This is because of the wood not being properly seasoned.

Before the sound-board is put in place it is carefully planed down to graduate it to different thicknesses at different points, and by means of this extra care we obtain the best tone effects in the different registers.

The sound-board is strengthened by *ribs* (see illustration) fastened on the back of it. This strength is necessary because there is considerable strain on the board, as the strings press upon it. The number and size of these ribs is so calculated that while they give the necessary strength they do not interfere with the vibration of the sound-board, which is of the most importance.

SOUND-BOARD BRIDGES

The sound-board bridges are made of the hardest maple, perfectly seasoned so that it can never shrink. They are glued and fastened to the sound-board so substantially that they can never become loose. The bearing of the strings on the bridges is calculated so that the pressure will be as light as possible. When the strings press too heavily on the bridge the quality of tone is injured, because this pressure causes the sound-board to vibrate less freely.

After the sound-board is fastened in place the bridge is carefully planed down so that its height will cause the strings to press it with only suffi-

THE WING PIANO

cient firmness to transmit all their vibrations to the sound-board, but not so heavily as to deaden the tone. The height of the bridge greatly affects the "singing" quality of the tone, and must be regulated with great care.

Before the strings are put on, cords are strung around the pins to give the "bellyman" an idea of how the strings will bear. With these cords as guides, he planes the bridge to the required height. This is one of the "nicest" processes in piano-making, one of those for which the greatest amount of skill is required.

THE WING PIANO METAL-PLATE CONSTRUCTION

Grand pianos have always been more satisfactory to musicians than uprights because possessing greater strength; they give the impression of having greater reserve of power. A great deal of the strength in grand pianos is owing to the plate construction. The Wing Piano plate is cast after our own patterns, and in construction follows as closely as possible that of the grand piano plate. It reaches from top to bottom of the piano, giving strength and firmness to the *wrest-plank*, *sound-board*, and *wooden frame or foundation*. The plate is fastened to the framework by large, heavy bolts passing through the framework and wrest-plank.

In the metal plate are cast supports to hold the key-bed solidly. Such a support as this is much more substantial than when (as in the ordinary form of construction) the key-bed is supported solely by the case.

The *metal depression bar* presses the strings down firmly on the plate bridge, making the vibrations (and consequently the tone) clear and distinct.

THE WING PIANO

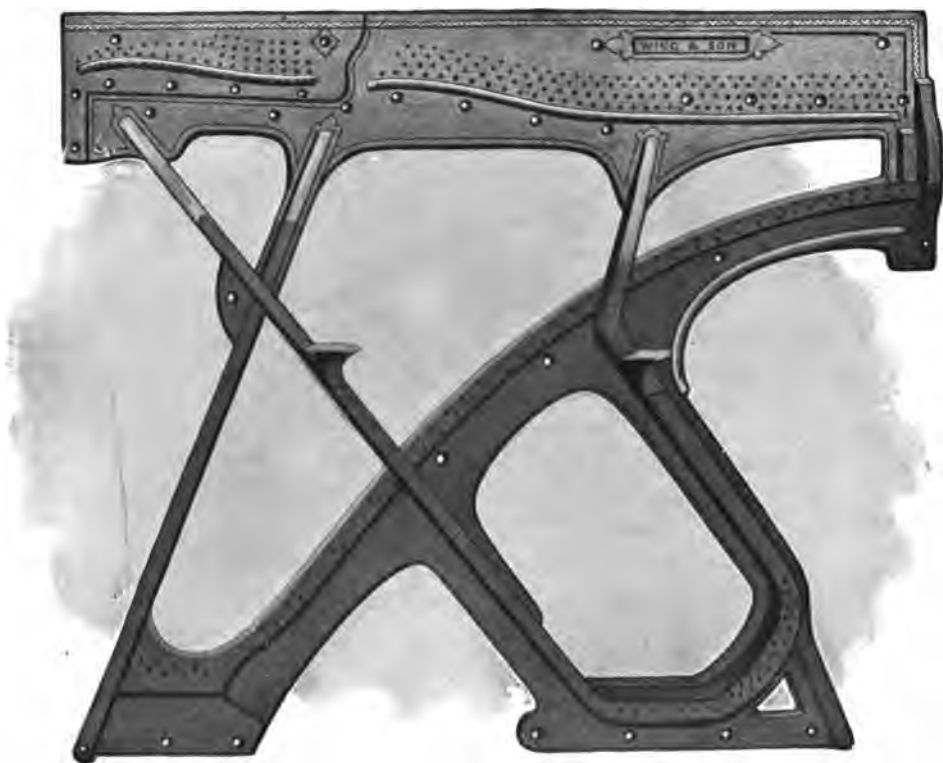


ILLUSTRATION SHOWING WING PIANO METAL-PLATE CONSTRUCTION

STRINGS

The strings are made of the toughest, finest, and strongest steel wire. Every string is perfectly tempered and is tested for its strength and vibrating qualities. The strings must be free from all imperfections, even the slightest, for if the strings do not vibrate freely and clearly the piano will not give forth a pure tone.

THE WING PIANO

There are three strings to each note in the treble and middle registers; they are tuned in unison, the same as in grand pianos. The strings in the bass are very heavy and are wound with copper. It is the stretching of the strings, as much as the slipping of the tuning-pins, that causes pianos to get out of tune. Even in the finest strings there is, when new, a certain amount of "stretch" or elasticity, but good strings lose this after the piano has been used and played on a short time. Poor strings, however, are continually stretching, making it necessary to tune the piano very frequently, and are therefore a continual source of annoyance.

TUNING-PINS

The tuning-pins are made of Norway wrought iron, that being the toughest and most tenacious iron known, and are made very heavy and thick to prevent any possibility of bending and breaking. Defects in tuning-pins cause a great deal of annoyance. It is very difficult to extract a bent or broken pin without injuring the wrest-plank or enlarging the pin-hole considerably, in which case it is necessary to drive a larger pin, which may split the wrest-plank.

WING PIANO-HAMMERS

The *hammers* are covered with two thicknesses of the purest wool felt, unmixed with cotton or any other material. The sweetness and mellowness of the tone depend largely upon the hammers. If the felt on the hammers is of the proper softness and elasticity, the tone will be rich, clear, and sweet. When it is desired to have a very brilliant tone, the hammer-felt is made harder, but if too hard, the tone will be metallic and harsh. If the felt is soft without being elastic, the tone is likely to be "wooly"

THE WING PIANO

and indistinct and the sound muffled. If the felt is hard without being elastic, the tone will be metallic and harsh.

Hard hammers become further hardened, matted down, or "calloused" by striking against the strings whenever the piano is in use. A brilliant tone tends gradually to become harder and more metallic, whereas a mellow tone, for the same reason, in time becomes more brilliant. A mellow tone—other things being equal—is therefore more lasting because the hammers, being softer at first, do not become hardened so quickly. It will be noticed in most pianos that, after they have been used a few years, the tone has become harsh and metallic. This is due to the hammers becoming hard. The very best hammer-felt is made of a mixture of American and foreign wool, which gives the desired combination of compactness with elasticity. Hammers made of wool mixed with cotton or shoddy, become hard in a very short time. Pure wool felt keeps its softness much longer, but in time it also will harden. *Our special process of tone-regulating causes the felt to retain its softness and elasticity and not become hard by use, thereby preventing the tone from becoming harsh and metallic from continuous usage.* This process is patented and cannot be used by any other manufacturer. We call special attention to this feature, as it is very important, since it has to do with the lasting quality of tone. Our special process of treating the hammers is fully described in another part of this book.

HAMMER-SHANKS

The *hammer-shanks* are made of light, but very strong, straight-grained maple. This wood is selected mainly because of its grain, which is very straight, and renders it less likely to twist or warp than any other. The space between the hammers is so small, the hammers almost touching

THE WING PIANO

each other, that when the hammer-shank is twisted it not only causes the corresponding hammer to work improperly, but by this twisting it throws the hammer against the next one to it and interferes with that also.

All hammer-shanks to be used in the Wing Piano are carefully examined and tested not only for such defects as knots, etc., but smaller imperfections, which are not so easily distinguishable. All shanks that are in any way defective are discarded, and only those that are absolutely perfect are used.

KEYS

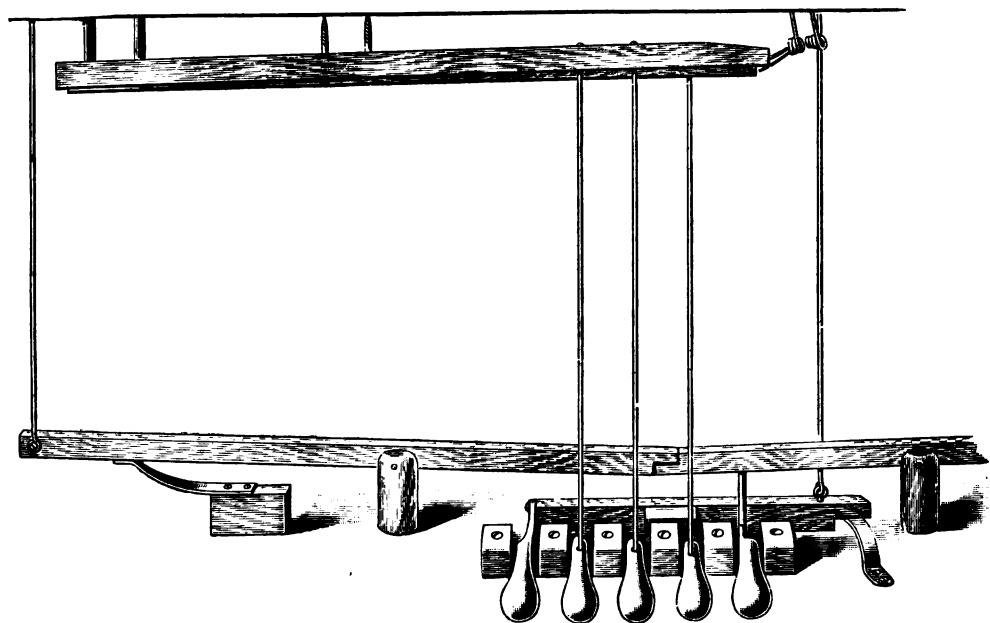
(See illustration of key, page 32.)

The white key-tops in Wing Pianos are all made of the very finest selection of pure white ivory. Only the hardest and best quality is used. There are cheaper grades of ivory, which are liable to take on a yellowish or brownish tinge, and some piano-makers even use celluloid keys to save expense. The ivory keys are smoothly finished and the surfaces are highly polished. Ebony is used for the black keys. These, like the ivory keys, are finely finished and polished. The ebony keys are also enamelled to give them the same brilliant finish as the ivory keys.

PEDALS

The Wing improved metal pedal action is absolutely the best in use at the present time, and it is difficult to see how it can be improved upon. Every expert who has tested it declares it absolutely perfect. Pedals are a matter of much greater importance than one realizes who has never had a piano and has not been annoyed by the defects of ordinary pedals. In

THE WING PIANO



WING PEDAL ACTION

many pianos the pedals are made of so many parts that there is a great amount of friction and wear, causing distracting noises and slackness or lost motion, so that the player is liable to get his pedal effects in the wrong places. These faults are extremely annoying, and are more often complained of than any other one difficulty in pianos. The Wing pedal action has less than one-half the number of pieces used in ordinary pedal actions. It is absolutely noiseless and instantaneous, so that pedal effects may be obtained at precisely the right instant.

THE WING PIANO

WING PIANO-CASE CONSTRUCTION

The case is made of five thicknesses of hard wood. Even the inside part is made of *hard* wood, selected with great care, and thoroughly seasoned and dried so that it will not warp (twist) or split. Many manufacturers use a cheap grade of lumber for this part of the case, as it is concealed, but any warping here will affect the outer surface also. There are four veneers for this case, two on the inside and two on the outside. These veneers are cross-banded—that is, they are placed so that the grain of each one runs in a different direction from the one next to it. The veneers are solidly glued to each other and to the inside or foundation of the case, making them into one solid piece, but with the strength of five thicknesses. The veneers are sawed and of sufficient thickness to make the case *strong* as well as handsome. Many pianos are made with veneers which are so thin, being *shaved* instead of sawed, that they have no strength, and consequently do not add any strength to the rest of the case.

The veneers used for the Wing Piano cases are of four kinds, viz.: rich mahogany, French burl walnut, Circassian walnut, and quartered oak.

These woods are used because of their durability and great beauty, and because they permit of a very brilliant and lasting polish or finish.

The mahogany used comes from the West Indies, as that has the handsomest figure, and is richer in color than any other variety of mahogany, and more beautifully marked. The “ebonized” cases are veneered with mahogany the same as the mahogany cases, and are stained with an aniline stain to a perfect black. This stain enters into the pores of the wood, and is therefore permanent.

The oak veneering is sawed *quarter-wise* with the grain, to bring out

THE WING PIANO

the grain or figure better than would be done if it were sawed in parallel layers through the log. It also renders it less liable to warp or twist. In cutting oak veneers, the tree is first quartered, and then the veneers are cut off diagonally.

CHEAP VENEERING

Cheapness is obtained in some pianos by using *shaved* veneering instead of sawed veneer. Sawed veneering is cut with a very thin saw; while not thick, it is nevertheless a section of wood and possesses strength accordingly. Shaved veneering is cut from the plank or board with a rapidly rotating knife, which slices it off as thin as the thinnest shaving. A shaving of this kind possesses absolutely no strength, and is likely in a short time to peel or crack.

VARNISH FINISH

Every Wing Piano case receives seven coats of varnish. Each coat is allowed time to dry and sink into the wood. This is to give it a smooth, brilliant, and lasting finish. There is no color in the varnish, so that the beautiful color of the wood shows plainly as through a sheet of clear glass. The varnish is made of the best oils and gum, so that the brilliant finish will remain permanent, and will not check or flake. It is impossible to obtain a durable and brilliant finish by means of cheap varnishes containing rosin and other like ingredients.

THE WING PIANO

SPECIAL TONE-REGULATING PROCESS

The process of tone-regulating is pricking the hammers with needles until the hammer-felt has the requisite softness, and the piano gives forth the desired quality of tone.

In most pianos, as the hammer-pricking is done by hand with a contrivance of needles set in a wooden handle, these needles cannot be directed perfectly straight, and they will not penetrate every time to exactly the same depth. The result will not be perfectly uniform. Some hammers will be softer than others.

In the special tone-regulating process used exclusively on the Wing Piano, the hammers are pricked by a *patented machine* with an arrangement of extremely fine needles which penetrate the felt very rapidly, perfectly straight, and to an exactly even depth at every part. This makes the felt uniformly soft and elastic throughout, and just as elastic underneath as at the surface. It will not become hard even under the most severe and long-continued use. This process is a matter of great importance because it greatly increases the durability of tone. This process being a patented one is confined to the Wing Piano.

THE WING PIANO

IMPROVEMENTS

Every Wing Piano has the following improvements and special features:

Full metal frame, grand piano construction. (Described on page 62.)

Double-lever grand repeating action. (Described on page 52.)

• Grand scale, three strings in middle and bass registers, and overstrung bass.
(Described on page 55.)

Built-up wrest-plank construction. (Described on page 59.)

Built-up end-case construction. (Described on page 72.)

Noiseless, direct-motion metal pedal action. (Described on page 66.)

Practice pedal. (Described on page 80.)

Noiseless full-length duet desk. (Described on page 74.)

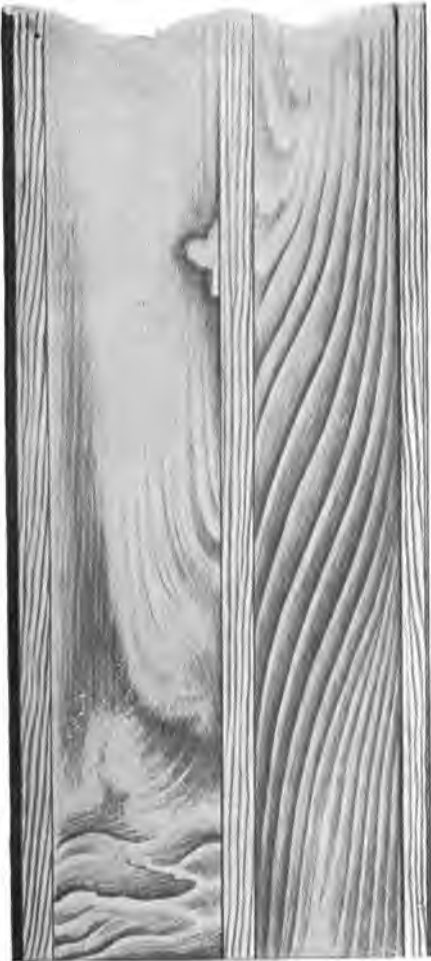
Dove-tail top and bottom frame construction. (Described on page 73.)

Key-bed supports cast in the metal plate. (Described on page 75.)

Metal-covered hammer-rail.

Instrumental attachment. (Described on page 76.)

THE WING PIANO



BUILT-UP END-CASE CON- STRUCTION

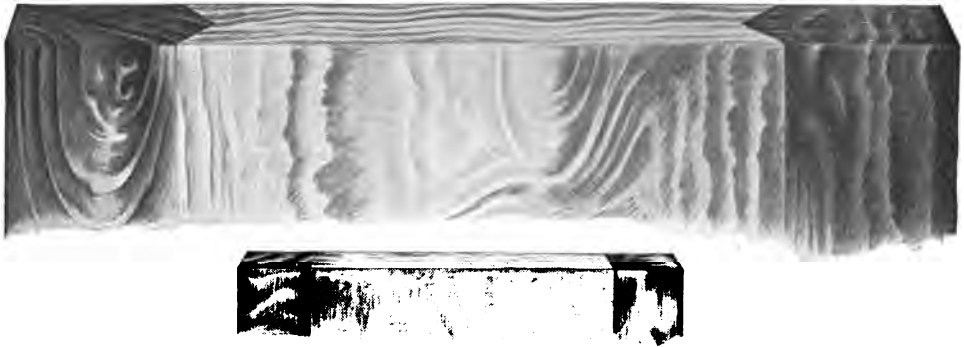
The accompanying illustration shows the built-up end-case construction of the Wing Piano. The end of the case, instead of being made of a single piece, is *built up* of five thicknesses, with the grain of each running in a different direction. This is to secure the greatest solidity and strength.

ILLUSTRATION SHOWING "BUILT-UP" END-
CASE CONSTRUCTION

THE WING PIANO

DOVETAIL TOP AND BOTTOM FRAME CONSTRUCTION

The accompanying illustration shows the dovetail top-frame and bottom-frame case construction used in the Wing Piano. Both parts of the frame are joined together in such a way that they can never draw apart. In the



“DOVETAIL” TOP AND BOTTOM FRAME CONSTRUCTION. SMALL ILLUSTRATION SHOWS ORDINARY FORM OF CONSTRUCTION, *i.e.*, STRAIGHT JOINTS

lower (small) illustration is shown the ordinary form of top-frame construction. The *end wood* and *side wood* come together to form the glue-joint, and a glue-joint cannot be made solidly when end wood bears against side wood. This difficulty is overcome by our dovetail top and bottom frame construction. In this construction the *side wood* is made to come against *side wood* (see larger illustration), allowing the glue to sink into the open grain, which takes it readily, making a firm and solid joint which cannot draw apart.

THE WING PIANO



LARGER ILLUSTRATION SHOWS IMPROVED FULL-LENGTH MUSIC DESK. SMALL ILLUSTRATION SHOWS ORDINARY SMALL DESK

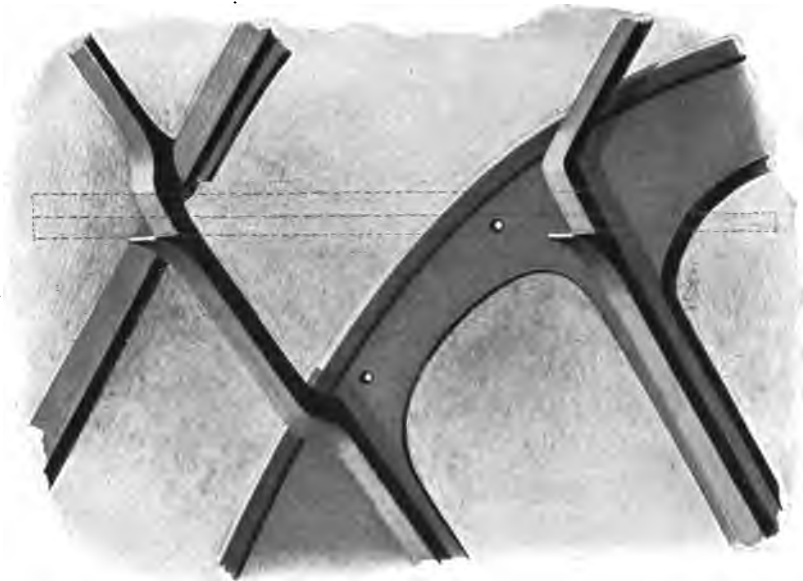
FULL-LENGTH NOISELESS DUET DESKS

(See illustration above.)

This desk is sufficiently large to accommodate two or even three pieces of music, and hence is called the duet desk. There are other large desks, but none are so handsome as this, and all have some objectionable features. This differs from other desks of similar kind, being *noiseless* and *adjustable*. It

THE WING PIANO

is operated by a spring, and therefore is extremely light. It will not bind or catch in opening or closing.



WING PIANO PATENT KEY-BED SUPPORT. THE DOTTED LINES SHOW HOW THE KEY-BED IS SUPPORTED BY THE METAL SUPPORTS

PATENT METAL KEY-BOARD SUPPORT

(See illustration above.)

The key-bed on which the keys rest supports the keys, and in turn it is supported by the arms of the case at each end. The key-bed is the full width of the piano, and when it is supported in this way at each end of the piano only, it often happens that it will "sag," or curve downwards in the centre, throwing

THE WING PIANO

the keys out of level. To prevent this sagging or bending we have cast in the metal plate *two metal supports*, which come beneath the key-bed in the centre, and give additional strength and stiffness. These additional supports in the centre of the key-bed render it absolutely impossible for it to sag or bend. (See illustration on page 75.)

THE INSTRUMENTAL ATTACHMENT

The instrumental attachment has proven to be one of the most successful improvements ever made in the piano. Upward of ten thousand pianos containing this attachment have been manufactured and sold, and are now in use and giving perfect satisfaction. The attachment has been on the market over four years, so that there has been ample time to test it thoroughly. It is more popular now than ever before.

The large increase in the sale of Wing Pianos with the instrumental attachment has caused several imitations to be placed on the market, and against these we wish to warn the public. The genuine instrumental attachment is patented and can be had only in the Wing Piano. Our method of constructing the instrumental attachment is also patented and cannot be used by any other firm. Therefore no other firm can supply a piano containing the genuine instrumental attachment or one manufactured in the same manner, although there are several who claim to be able to do so. Such other attachments made in imitation of ours are necessarily imperfect in construction and can produce only imperfect effects. They are a detriment instead of a benefit to the piano.

The instrumental attachment enables any ordinary player on the piano to imitate perfectly the tones of the mandolin, guitar, harp, zither, and banjo. Music written for these different instruments, with and without piano accompaniment, can be rendered just as acceptably by a single player on the piano as though played by a parlor orchestra. The player needs only to know how to play the piano. Not the slightest extra effort or skill is rendered necessary by the instrumental attachment.

THE WING PIANO

The method of using the instrumental attachment is most simple. To bring it into use the player merely presses one of the extra pedals, according to the effect or imitation desired. The player need then give no further attention to the instrumental attachment, as the effects and imitations come of themselves. The piano is played in the ordinary manner.

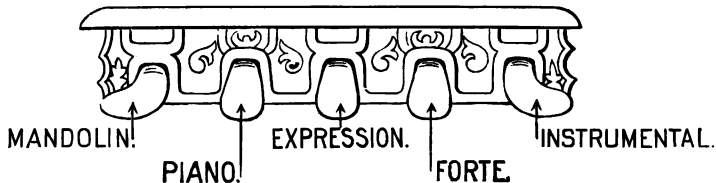
The instrumental attachment need not be used throughout an entire piece, but may be discontinued at any time during the playing of a piece without interruption. The ease and quickness with which the instrumental attachment can be discontinued and brought into use again is marvellous. All that is necessary is a movement that every piano player learns to make almost unconsciously—a slight pressure of the foot on one of the pedals.

The instrumental attachment is so simple that it cannot get out of order itself. It is not connected with the mechanism of the piano and therefore cannot put the piano out of order.

INSTRUCTIONS FOR USE OF THE INSTRUMENTAL ATTACHMENT

Wing Pianos, styles 23, 26, Imperial, and 29 with instrumental attachment have five pedals. They are as follows (beginning at the right):

1. Instrumental pedal.
2. Loud pedal.
3. Expression pedal and practice clavier.
4. Soft pedal.
5. Mandolin pedal.



THE WING PIANO

ZITHER

To imitate the zither, use the *instrumental pedal* (No. 1). Press the pedal down to its fullest extent. It will then stay in position itself. Then press the expression (No. 3) pedal *half way down and hold it in that position*. When the piano is played the effect will be a perfect imitation of the zither.

To discontinue using the instrumental pedal, press down the loud or soft pedal to its fullest extent. This will release the instrumental pedal.

MANDOLIN OR TREMOLO

To imitate the mandolin, use the mandolin pedal. This also will remain in position when pressed down. Use the expression pedal as before. When the piano is played with mandolin pedal in use the effect will be that of the mandolin playing in concert with the piano.

Discontinue the mandolin pedal in the same way as the instrumental pedal.

BANJO

To imitate the banjo, press down the instrumental pedal half way (not to its fullest extent) and hold it in that position. Then press down centre (expression) pedal to fullest extent. Keep these two pedals in position throughout the piece or such parts of it as are intended to imitate the banjo. The effect will be a perfect imitation of the banjo and piano together.

THE WING PIANO

To discontinue the banjo effect, allow the two pedals to come back to their usual position.

GUITAR

To imitate the guitar, use the instrumental and expression pedals in the same manner as in imitating the zither. The touch should be gentle although staccato. Use loud pedal on chords.

HARP

To imitate the harp, press down the instrumental pedal. Also loud pedal and expression pedal half way and hold them in position. Play arpeggios.

GENERAL INFORMATION

For practising purposes use the centre pedal. Press it down to fullest extent and hold it in that position. The use of this pedal prevents wear on the hammers from constant practising. It also softens the tone and prevents annoyance to listeners.

When the mandolin and orchestral pedals are not in use, you have the ordinary tone of the piano, and the soft and loud pedals may be used the same as in any other instrument.

The instrumental attachment is an exclusive feature of the Wing Piano, and cannot be had in any other piano.

We publish twelve pieces of music written and arranged expressly for the instrumental attachment, imitating the mandolin, banjo, harp, zither, and guitar. This music sent free on request.

THE WING PIANO

THE PATENT PRACTICE ATTACHMENT

The practice attachment absolutely prevents wear on the piano from practising, and softens the tone to such an extent that one can practise day or night without annoying any one in the vicinity or even in the next room.

It is admitted that a child will learn better and more quickly on a new piano than an old one, and that practice on a new piano is better calculated to develop proper ideas of tone and touch. The objection to using a new piano for practice purposes is the wear. An ordinary piano, after being used for four or five years, loses its sweetness of tone because the soft, elastic felt hammers become hardened by constant striking of the fine felt upon the wire strings. When the practice attachment is in use the hammers are much nearer the strings, and do not strike the strings with nearly so much force, thereby preventing the hardening and cutting of the felt.

This improvement is in every Wing Piano.

THE WING PIANO FACTORY

We present herewith an illustration (from photograph) of our new building, No. 202-204 East 12th Street, New York City. This is occupied by us exclusively as the manufactory of the Wing Piano. Our office and wareroom is also at the above address, where out-of-town visitors are cordially welcome at all times.



WING PIANO FACTORY AND OFFICES

THE WING PIANO

GUARANTEE

We wish to call special attention to our new form of guarantee and indemnity certificate. We claim that this is the most liberal guarantee ever issued by any firm of piano manufacturers, or in fact by any firm in any business. Under this guarantee a purchaser of a piano in the most distant part of the country is absolutely protected against any loss. This guarantee, which is given with every Wing Piano, provides that during the term of twelve years we make good all defects, such as are not due to improper use or accident, either by repairing piano at our factory or at the purchaser's house, or by supplying perfect parts in place of broken or defective ones. In case the work is done at the purchaser's house we pay all expenses for labor and material. If the work is done at our factory we pay all expenses for labor and material and pay the freight expenses as well.

Purchasers are requested to carefully read this absolutely safe guarantee and compare it with those issued by other piano manufacturers.

The construction of the Wing Piano is such—only the very best materials being used, and these being put together in the most solid and substantial manner—that with ordinary care it will last and retain its good qualities of tone and action for a lifetime. If our guarantee meant simply the length of time a piano would last, we could safely guarantee the Wing Piano for an indefinite length of time. What the guarantee means is the length of time the piano will remain in good order and condition and continue to give satisfaction without requiring any repairs beyond the ordinary yearly tuning.

Guarantee and Indemnity Certificate

WING PIANO, STYLE _____ No. _____ DATE _____

We hereby agree to make good at our expense, at any time within twelve (12) years from date, any defect in tone, action, workmanship, or material of above piano. We will make good such defects either by repairing said piano at our factory, or at place of purchase, or by supplying the defective or broken parts.

We agree if the work is done at the purchaser's house to pay all expenses for labor and material.

We agree if the work is done at our factory to pay all expenses for labor and material, and to pay freight expenses to our factory and return.

It is agreed that we are not to be held responsible for defects or damage due to misuse or accident, or for ordinary tuning or regulating which every piano requires at certain intervals.

WING & SON

THE WING PIANO

PRICE

There are pianos which cost more and many which cost less than the Wing Piano. As every purchaser naturally desires to get the very best piano at the lowest possible price, it is a serious question whether to purchase the Wing Piano or a piano which costs more or one which costs less. One who desires the very best that can be obtained would not object to paying more for another piano if it was superior to the Wing Piano; but, on the other hand, no one is so regardless of money as to buy the Wing Piano if one of equal quality could be purchased for less.

The price of the Wing Piano pays for the best material and the best workmanship. Every dollar that ought to be spent on it to make it a perfect piano is spent. But there is not an item of unnecessary expense. Our twenty-nine years of experience enables us to manage the materials and labor in the most scientific and effective way, so that there is no waste of either. Our effort is to secure the very best results as economically as possible, so as to offer a perfect piano at the lowest limit of cost.

The extravagant price charged for certain pianos has nothing to do with their quality or the cost of making them. Unnecessary and often extravagant expenditures are added to the price without improving the quality in the slightest degree. Besides this, many people are willing to pay an extra price as a premium for the sake of a fashionable name; but there are fewer of these people than formerly. At the present time the great majority of thoughtful people who purchase a piano care more for its actual merits than for its name. They are perfectly willing to pay for quality, but for quality only.

THE WING PIANO

CHEAP PIANOS

A cheap piano is cheap because it is made of inferior or defective materials, costing less than good materials; the lumber is unseasoned, and the construction is hurried and unsubstantial. It is easy to say of any piano that it is made of the "best" material and in the "best" way; but when the question arises of what is the precise grade of each material used and what is the exact method and form of construction followed in every process, if the truth be told, it will be found that at nearly every stage in the manufacture of a "cheap" piano some doubtful or inferior material is used or some makeshift expedient adopted.

Some of the following defects are sure to develop in a cheaply made piano after a few years' use. The piano will lose its tone on account of the sounding-board shrinking, because of being made of unseasoned lumber; the joints of the case will draw apart by reason of shrinkage; the case veneers will peel; the action will stick or rattle. A cheaply made piano cannot last more than four or five years at the longest, and it will not give satisfaction even during that short length of time. It, therefore, is not economy to buy a cheap piano even though twenty-five or fifty dollars may be saved in the first cost by so doing, for in the end it costs more. The Wing Piano is a better purchase than any cheaper instrument, because it will last a life-time, and will give perfect satisfaction while it does last.

The loss of all ambition to play, or desire to have any one else play, the loss of all pride in the piano because it has become such an unmusical affair, is a common result of investing in a "cheap" piano.

THE WING PIANO

TRIAL

We will send the Wing Piano on trial to any part of the United States. We will ship the piano without asking for any advance payment or deposit, allow a thorough trial and examination *at home*, and if not perfectly satisfactory we will take it back and pay the return freight also. There are no conditions attached to this trial. We ask for no advance payment or deposit; we pay the freight in advance. In this way the person ordering the piano is under no more obligation to keep it than he would be if examining it in a dealer's store or wareroom. It is to the interest of every purchaser to try the Wing Piano, since we give this opportunity of doing so absolutely without risk or expense.

TERMS

We will sell the Wing Piano on easy monthly payments when desired. We will be glad to give particulars of our terms of easy payments upon application.

EXCHANGE OF OLD INSTRUMENTS

We also take old pianos and organs in exchange. We have description blanks which can be filled out by the owners of such instruments, and these description blanks give us just as accurate an idea of the value of the old instrument as though we were to examine it personally. Description blanks will be furnished on application.

OUR RESPONSIBILITY

The firm of Wing & Son has a high rating on the books of the two leading commercial agencies of this country, Dun and Bradstreet. These

THE WING PIANO

agency books may be examined at any bank in the United States, and will give assurance of our commercial standing. Added to this, our record for fair dealing during the twenty-nine years that we have been continuously in business is sufficient to satisfy any one that we have both ability and the disposition to carry out our agreements.

Perfectly plain and straightforward dealing, and the complete satisfaction of every customer has been our policy. We have found this both agreeable and profitable. *We are pleased to refer to any one who has ever bought a piano from us or had any dealings with us.*

CORRESPONDENCE

We take special pains with correspondence. All letters are answered personally. We are glad to give any kind of information regarding pianos. All questions will be cheerfully and fully answered.

THE WING PIANO

STYLES OF WING PIANOS

The Wing Piano is made in six styles at various prices. These styles are cased in four different woods. The materials and construction of all Wing Pianos are the same; the difference is in size and appearance only. The larger pianos, on account of their size, are more powerful in tone, but the smallest is sufficiently powerful in tone to fill any hall of ordinary size, and consequently is large enough for any parlor.

In appearance and finish the Wing Pianos are most elegant. The cases have been specially designed by first-class artists, and consequently are modern in every detail, and rich and artistic in ornamentation. Every detail of ornamentation and finish is artistic and genuine.

THE WING PIANO

LIST OF PATENTS FOR IMPROVEMENTS USED IN THE WING PIANO

	No.	DATE.
Key-bed Support	350,517	Oct. 12, 1886.
Tone-regulating Device	465,505	Dec. 22, 1891.
Instrumental Attachment	570,582	Nov. 3, 1896.
Instrumental Attachment	580,986	April 20, 1897.
Instrumental Attachment	589,751	Sept. 7, 1897.
Music Desk	475,369	May 24, 1892.
Music Desk	484,481	Oct. 18, 1892.
Music Desk	514,249	Feb. 6, 1894.
Music Desk	560,248	May 19, 1896.
Pedal Action	523,092	July 17, 1894.
Pedal Action	523,092	April 20, 1897.
Pedal Action	560,249	May 19, 1896.
Metal-covered Action Rail	344,677	June 29, 1886.

THE WING PIANO

WING PIANO, STYLE 21 CABINET GRAND UPRIGHT

(See illustration of Style 21 on page opposite.)

DESCRIPTION

7⅓ octaves.

Grand repeating action.

Grand scale, overstrung bass, three strings to each note in treble and middle registers. Bass strings copper and steel covered.

Size.—Height, 4 feet 7½ inches; length, 5 feet; depth, 2 feet 3 inches.

Case.—Double veneered inside and outside.

Ornamental mouldings; carved pilasters and trusses.

Desk Panels carved in relief.

Woods.—Choice of French burl walnut; dark, rich mahogany; genuine quartered oak, or ebonized.

Keys.—Of best ivory and ebony.

SPECIAL FEATURES

“Built-up” wrest-plank construction (four thicknesses).

Dove-tail top and bottom frame case construction.

Full metal plate with metal depression bar, and metal supports for keybed.

Improved noiseless direct motion pedal action.

Improved practice attachment.

Full-length adjustable duet music desk.

Hammers treated by special process.

Instrumental Attachment

Imitating perfectly the tones of the mandolin, guitar, harp, zither, and banjo.

The above improvements are fully described elsewhere in this catalogue.

This piano guaranteed for twelve (12) years against any defect in tone, action, workmanship, or material.

NOTE.—All Wing Pianos are the same in material and construction; the difference is in size and appearance only.

List price of Style 21 - - - - \$600



WING PIANO, STYLE 21

FOUR PEDALS

CABINET GRAND UPRIGHT

(See description on opposite page)

For information regarding price and terms write to Wing & Son, Manufacturers,
202-204 East 12th Street, New York

THE WING PIANO

WING PIANO, STYLE 23

CABINET GRAND UPRIGHT

(See illustration of Style 23 on page opposite.)

DESCRIPTION

7½ octaves.
Grand repeating action.
Grand scale, overstrung bass, three strings to each note in treble and middle registers.
Size.—Height, 4 feet 8½ inches; length, 5 feet 2 inches; width, 2 feet 2½ inches.

Case.—Double veneered inside and outside. Ornamental carved pilasters and trusses; nickel-plated continuous hinges.

Desk-panels.—Carved in relief.

Woods.—Choice of French burl walnut; dark, rich mahogany; genuine quartered oak, or ebonized.

Keys.—Of best ivory and ebony.

SPECIAL FEATURES

“Built-up” wrest-plank construction (four thicknesses).

Dove-tail top and bottom frame case construction.

Full metal plate with metal depression bar, and metal supports for key-bed.

Improved noiseless direct motion pedal action.

Improved practice attachment.

Full-length duet music desk.

Hammers treated by special process.

Instrumental Attachment

Imitating perfectly the tones of the mandolin, guitar, harp, zither, and banjo.

The above improvements are fully described elsewhere in this catalogue.

This piano guaranteed for twelve (12) years against any defect in tone, action, workmanship, or material.

NOTE.—All Wing Pianos are the same in material and construction; the difference is in size and appearance only.

List price of Style 23 - - - - - \$750



WING PIANO, STYLE 23

FIVE PEDALS

CABINET GRAND UPRIGHT

(See description on opposite page)

For information regarding price and terms write to Wing & Son, Manufacturers,
202-204 East 12th Street, New York

THE WING PIANO

WING PIANO, STYLE 26 CONCERT GRAND UPRIGHT

(See illustration of Style 26 on page opposite.)

DESCRIPTION

7 $\frac{1}{3}$ octaves.

Double lever, grand repeating action with brass capstan screw.

Grand scale, overstrung bass, three strings to each note in treble and middle registers.

Longest strings, largest scale, and largest size of sound-board, giving greatest volume and power of tone.

Size.—Height, 4 feet 9 $\frac{1}{2}$ inches ; length, 5 feet 3 inches ; width, 2 feet 3 inches.

Case.—Double veneered inside and outside.

Ornamental carved pilasters and trusses ; grand revolving name-board (same as in grand pianos) ; panelled end.

Desk-panels.—Carved in relief. (Special design.)

Woods.—Choice of Circassian walnut ; rich figured mahogany ; genuine quartered oak, or ebonized.

Keys.—Of best ivory and ebony.

SPECIAL FEATURES

“Built-up” wrest-plank construction (four thicknesses).

Dove-tail top and bottom frame case construction.

Full metal plate with metal depression bar, and metal supports for key-bed.

Improved noiseless direct motion pedal action.

Improved practice attachment.

Full-length duet music desk.

Hammers treated by special process.

Instrumental Attachment

Imitating perfectly the tones of the mandolin, guitar, harp, zither, and banjo.

The above improvements are fully described elsewhere in this catalogue.

This piano is guaranteed for twelve (12) years against any defect in tone, action, workmanship, or material.

List price of Style 26 - - - - - \$950



WING PIANO, STYLE 26

FIVE PEDALS

CONCERT GRAND UPRIGHT

(See description on opposite page)

For information regarding price and terms write to Wing & Son, Manufacturers,
202-204 East 12th Street, New York

THE WING PIANO

WING PIANO, NEW STYLE IMPERIAL CONCERT GRAND UPRIGHT

(See illustration of New Style Imperial on page opposite.)

DESCRIPTION

7 $\frac{1}{3}$ octaves.

Double lever, grand repeating action with capstan screw.

Grand scale, overstrung bass, three strings to each note in treble and middle registers.

Longest strings, largest scale, and largest size of sounding-board, giving greatest volume of tone.

Size.—Height, 4 feet 9 $\frac{1}{2}$ inches;

length, 5 feet 3 $\frac{1}{2}$ inches; width, 2 feet 4 $\frac{1}{2}$ inches.

Case.—Double veneered inside and outside. Ornamental carved pilasters and trusses; grand revolving name-board (same as in grand piano); panelled end.

Woods.—Choice of superior Circassian walnut; rich figured mahogany; genuine quartered oak, or ebonized.

Keys.—Of best ivory and ebony.

SPECIAL FEATURES

“Built-up” wrest-plank construction (four thicknesses).

Dove-tail top and bottom frame case construction.

Full metal plate with metal depression bar, and metal supports for key-bed.

Improved noiseless direct motion pedal action.

Improved practice attachment.

Full-length duet music desk.

Hammers treated by special process.

Instrumental Attachment

Imitating perfectly the tones of the mandolin, guitar, harp, zither, and banjo.

This piano is guaranteed for twelve years against any defect in tone, action, workmanship, and material.

List price of New Style Imperial - - - \$1,100



WING PIANO, NEW STYLE IMPERIAL

CONCERT GRAND UPRIGHT

(See description on opposite page)

For information regarding price and terms write to **Wing & Son, Manufacturers,**
202-204 East 12th Street, New York

THE WING PIANO

WING PIANO, STYLE 29

CONCERT GRAND UPRIGHT

(See illustration of Style 29 on page opposite.)

DESCRIPTION

7 $\frac{1}{3}$ octaves.

Double lever, grand repeating action with brass capstan screw.

Grand scale, overstrung bass, three strings to each note in treble and middle registers.

Longest strings, largest scale, and largest size of sound-board, giving greatest volume and power of tone.

Size.—Height, 4 feet 10 inches; length,

See note on page 99 regarding case of Style 29.

5 feet 3 $\frac{1}{2}$ inches; width, 2 feet 4 $\frac{1}{2}$ inches.

Case.—Double veneered inside and outside. Ornamental carved pilasters and trusses; grand revolving name-board (same as in grand pianos); panelled end.

Woods.—Choice of superior Circassian walnut; rich figured mahogany; genuine quartered oak, or ebonized.

Keys.—Of best ivory and ebony.

SPECIAL FEATURES

"Built-up" wrest-plank construction (four thicknesses).

Dove-tail top and bottom frame case construction.

Full metal plate with metal depression bar, and metal supports for key-bed.

Improved noiseless direct motion pedal action.

Improved practice attachment.

Full-length duet music desk.

Hammers treated by special process.

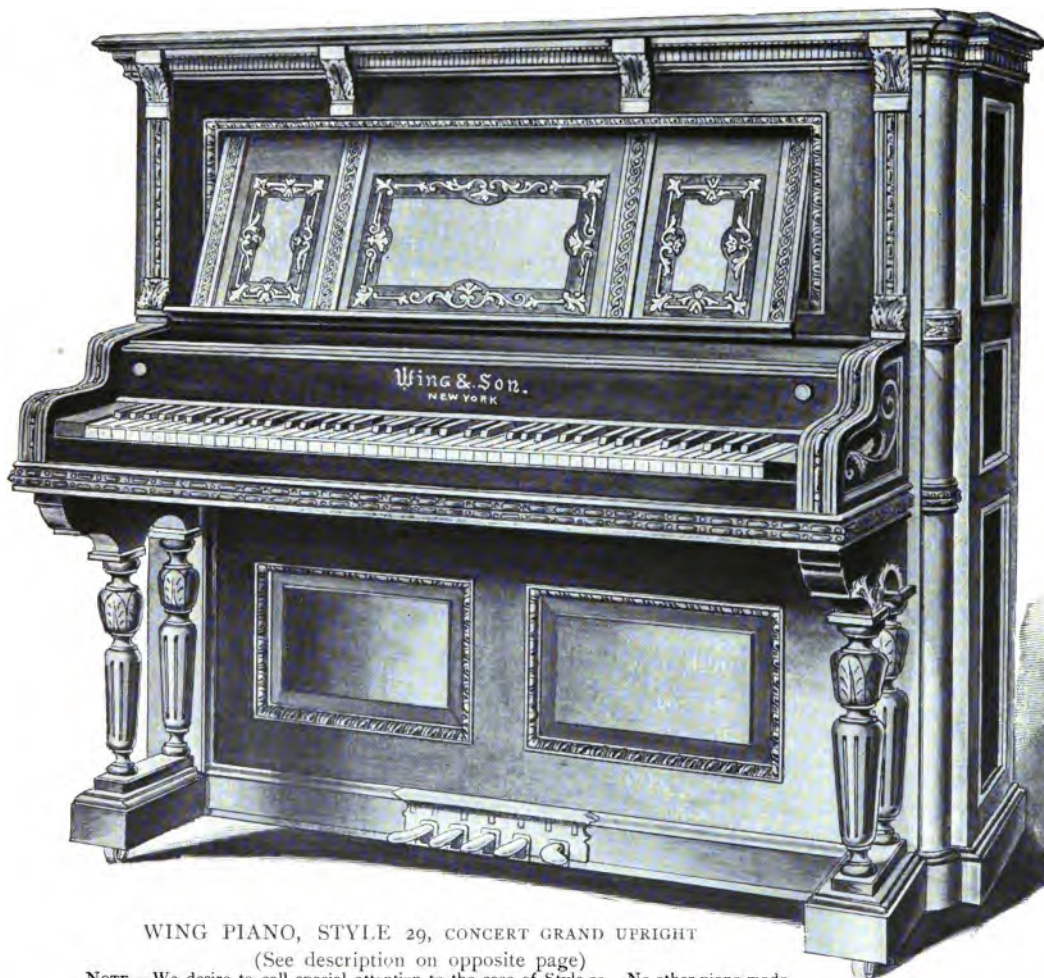
Instrumental Attachment

Imitating perfectly the tones of the mandolin, guitar, harp, zither, and banjo.

The above improvements are fully described elsewhere in this catalogue.

This piano is guaranteed for twelve (12) years against any defect in tone, action, workmanship, or material.

List price of Style 29 - - - - - \$1,200



WING PIANO, STYLE 29, CONCERT GRAND UPRIGHT

(See description on opposite page)

NOTE.—We desire to call special attention to the case of Style 29. No other piano made equals this in style and design of case. The case is elaborately ornamented with panels and rich carvings and mouldings, both on front and sides. *A few special features:* Elaborate carving (special design) on desk; carved mouldings on desk; carved mouldings surrounding desk; carved mouldings at top of piano, on front and sides; carved pilasters with carved caps and bases on front of piano; carved trusses; carved arm (at end of key-board); sunken panel with raised carvings on side of arms; carved mouldings on front of key-bed; raised panels below key-board, with carved mouldings surrounding; three deeply sunken panels on end of piano, with carved mouldings surrounding.

**For information regarding price and terms write to Wing & Son, Manufacturers,
202-204 East 12th Street, New York**

THE WING PIANO

TESTIMONIALS

During the past twenty-nine years the Wing Piano has been sold and used in all parts of the United States by all classes of people. It has been subjected to the severest test—viz., that of hard, continuous use for long years. Its good repute does not rest upon any individual opinion nor that of a limited few. It is founded upon the combined endorsement of the very best people of *all classes* who are practically qualified to pass judgment.

The satisfaction expressed by the users of Wing Pianos during all these years has been universal. Those whose experience would naturally make them the most critical and exacting give it the highest praise. Every one whose testimonial appears in this book has bought and paid for a Wing Piano. No testimonials have been purchased or obtained by presents or favors. Every letter published herein states the honest opinion of its writer as to the quality of the Wing Piano. The following expressions of opinion are selected from thousands which we have received. We publish, separately, a large book of testimonials, which will be sent on application.

THE WING PIANO

COLLEGES, SCHOOLS, PUBLIC INSTITUTIONS

DANA'S MUSICAL INSTITUTE

WARREN, OHIO, October 24, 1897.

MESSRS. WING & SON, NEW YORK.

Gentlemen :—Please ship to Warren, Ohio, for use in the class and practice rooms of this institution, ten of your upright Wing Pianos. As the pianos used here are played upon a great deal, it is necessary that they not only be perfect in tone and action, but possess great durability. I have therefore carefully examined and tested pianos of different reliable makes, and place this order with you because I believe that the Wing Pianos will give the best satisfaction.

As you are aware, we have now in use here over fifteen of your pianos, and these, I take pleasure in stating, all give perfect satisfaction. I mention one in particular, which has been in use in the Institute for over twenty-two years, and, notwithstanding that it has been played upon constantly, is still a good instrument, and is being used at the present time. It seems to me that no one could desire a better evidence as to the durability of your piano than this.

Yours truly,

WILLIAM H. DANA,
President Dana's Musical Institute, Warren, Ohio.

SOUTHERN FEMALE COLLEGE

I have several of the Wing Pianos in use in our institution, and it is my pleasure to report that they give perfect satisfaction to pupils and teachers.

G. A. NUNNALLY, D.D.,
President Southern Female College, La Grange, Ga.

ARKANSAS CUMBERLAND COLLEGE

We have used three of the Wing Pianos in Arkansas Cumberland College for the last four years, during which time they have given entire satisfaction, showing excellent tone qualities and great durability under somewhat hard usage.

J. A. LAUGHLIN,
Arkansas Cumberland College, Clarksville, Ark.

THE WING PIANO

SALVATION ARMY HALL, NEW YORK

I beg to inform you that there is now in use in the public hall of the Salvation Army headquarters, where it is constantly used for musical services, one of your pianos with instrumental attachment. I have also one of your pianos with instrumental attachment in use at my home. I take pleasure in stating that both pianos give perfect satisfaction in all respects.

FREDERICK DE LATOUR BOOTH-TUCKER,
Commander of the Salvation Army in America.

Headquarters, 14th Street near 6th Avenue, New York.

DE SOTO HOTEL, SAVANNAH, GA.

For the past two years we have been using one of your pianos in the De Soto Hotel, and so thoroughly satisfied are we with the instrument, we feel it our duty to write you on the subject, and to say to any one in need of a high-grade instrument, that our advice is to buy a "Wing."

WATSON & POWERS,
Proprietors De Soto Hotel, Savannah, Ga.

OPERA HOUSE, KEY WEST, FLA.

The Wing Piano comes fully up to my expectations. The tone is sweet, and the action is very pleasant and easy. Every one who has seen it admires it. I have had several of our finest musicians in the city test it, and they all say with one accord that it is a very fine instrument. I have received a word of praise from all parts for placing such a fine piano in the theatre.

CHAS. BALL,
Proprietor Opera House, Key West, Fla.

AMERICAN TEMPERANCE UNIVERSITY

I may state that we are well pleased with the instrument, and find it fully equal to the exacting demand made upon a piano placed in a music school. The tone is rich and full, the mechanism good, and the case is of very handsome design. The action is quick and responsive. Altogether, the piano reflects great credit upon your firm for the skill shown in the construction.

W. RANDOLPH MUIR,
American Temperance University, Harriman, Tenn.

After having used the Wing Piano for more than a year, I can cheerfully say that it has given entire satisfaction; and for beauty, tone, and durability, I believe it stands unrivalled.

J. B. WILKERSON,
Principal Prospect Academy, Prospect, Tenn.

THE WING PIANO

BINGHAM HOTEL

The piano sent by your firm to me was highly satisfactory, being far superior to what I had expected. Its tone, quality, and finish have been most favorably commented upon, and I take pleasure in recommending the instrument as one worthy of all that has been claimed for it by your firm.

MRS. A. KLOPENSTINE,
Bingham, Utah.

MAVERICK HOTEL

I am highly pleased with the piano. Several have tried it, and are delighted with the tone and finish of the instrument. It speaks for itself, and I would not trade for any that I have seen.

MRS. P. V. CONOVER,
Eagle Pass, Texas.

GLOBE HOTEL

We are very much pleased with the "Wing Piano" and will highly recommend it. It has given satisfaction both in tone and action, and the instrumental attachment is considered fine.

MISS EVA MCHALE,
Globe Hotel, Oil City, Venango Co., Pa.

Our company procured one of your pianos and has it now in use. The company is very much pleased with the instrument, and it is pronounced by the musicians of this town to be one of the best that was ever shipped into Deadwood, and therefore we take great pleasure in recommending your make to all persons desirous of buying a piano.

JAMES FRAWLEY,
Foreman Deadwood Hook and Ladder Company, Deadwood, S. D.

We can speak of the piano only in the highest terms. It has had a very severe trial. In summer we move it from our town club house to our place on the river, where it is exposed to quite a good deal of dampness, but through it all it holds its tone wonderfully. We recommend it to any one who wants a good piano.

H. C. PRICE,
Secretary Alpha Boat Club, Chester, Pa.

THE WING PIANO

BISHOP'S HOUSE, SIOUX FALLS

Your Style 7 Piano is most satisfactory. Every one who has tested it pronounces it a fine instrument.

MISS M. O'GORMAN,
Bishop's House, Sioux Falls, S. D.

NEW JERSEY STATE REFORM SCHOOL

We are well pleased with piano, both as to tone and touch. Every one who hears or tries it thinks it very fine.

IRA OTTERSON,
Superintendent New Jersey State Reform School. Jamesburg, N. J.

THE WING PIANO

MUSIC TEACHERS, EXPERTS

PROFESSOR I. LEON, LEADER DE SOTO HOTEL ORCHESTRA

I bought one of your Style Six pianos seven years ago, to be used at the De Soto Hotel. Since the piano was received it has been in constant use, and I can say I never had a piano in my twenty-nine years' experience that gave me as good satisfaction as the Wing & Son, Style Six. It is used in orchestra twice each day for concert, for five months each year. Besides, it is at the disposal of the guests for twelve months each year. So you can see that it has about ten times the use of a piano in a private family, and, with all that, it keeps in tune. I never had more than two tunings in one year, and I can say truthfully the piano is just as good to-day as it was the day I bought it.

I. LEON,

Leader De Soto Hotel Orchestra, Savannah, Ga.

I wish to say that the piano I bought of you three years ago gives perfect satisfaction. Its construction is much like the famous Pleyel piano of Paris, which insures its lasting qualities. The tone is splendid and it repeats well. Its outward appearance is beautiful; in fact, the instrument is all that can be desired.

PROF. LOUIS LILIENTHAL,

Houston, Texas.

PROFESSOR W. H. DANA

Twenty years ago we purchased one of your pianos for use in our school, which has been in constant service ever since, and is still good in tune and action. Among the large number of pianos owned by us, there are nine different makes, and I am pleased to say none of them stand the wear and tear and keep in tune better than the "Wing." During the past year we have purchased a number of your Nos. 5 and 6 for class-room and other use, finding them in every case a good instrument, worthy the confidence of any desiring a first-class piano.

WM. H. DANA,

President Dana's Musical Institute, Warren, Ohio.

PROFESSOR SHIRMACHER, SOUTHERN FEMALE COLLEGE

I am requested by Professor Shirmacher, our director of music, to say that your instruments are entirely satisfactory, that the action is easy and elastic, that the staying properties are unusually permanent, and that its tone is easily adapted to singing.

G. A. NUNNALLY,

President Southern Female College, La Grange, Ga.

THE WING PIANO

One year ago from last October we bought one of your pianos and are well pleased with it. Its firmness of touch and clear musical tones cannot be excelled. We would not exchange our piano for any other. It keeps in tune well. We have had it tuned only once.

C. I. CONSTABLE,
Leader Baptist Choir, Goodland, Ind.

I have been the possessor of one of your pianos almost five months, and have used it daily both for private use and for teaching purposes. In appearance it is all that could be desired, and the tone and action are fine. I particularly admire the brilliant, rich, singing tone, which grows sweeter and richer every day. I will always be glad to recommend the Wing Piano.

MISS MERTIE L. HULL,
Henry, S. D.

I take pleasure in stating to you that the piano I purchased of you has given entire satisfaction. For sweetness of tone and workmanship we and our friends think it unsurpassed.

K. G. ZAHN,
205 Court Street, Plymouth, Mass.

The Wing Piano has been in our home six months, and although it came a long distance and was subjected to much handling, including nine miles' jolt from the railroad, its tone and touch to-day have the same sweetness as at first won for it the highest praise from all who heard it. The rich mahogany case retains its elegance of finish, and the wonder of those who see the instrument is how can such a magnificent instrument, containing all the latest improvements, be sold at such a low price.

C. V. THOMPSON,
Principal Southern Graded School, Smithville, Miss.

I have in my musical career seen and played upon many pianos, and I am happy to say that I can thoroughly endorse the Wing & Son Piano with instrumental attachment. The tone is powerful, rich, and melodious, and the action is even and agreeable.

PROF. WILLIAM DRESSLER,
113 West Seventeenth Street, New York City.

THE WING PIANO

JUDGES, OFFICIALS, BANKERS

JUDGE J. H. JAMES, SUPREME COURT, TEXAS

It is with real pleasure that I write you about our beautiful piano. I hardly know how to begin to express our entire satisfaction. Our Wing & Son has been played on by some of the best musicians in San Antonio, and one and all pronounce the piano rich in tone, of rare sweetness, and, in fact, perfect.

I feel that I am safe in saying that no finer piano can be found anywhere.

MRS. J. H. JAMES,
602 Cameron Street, San Antonio, Texas.

HON. J. H. JAMES,
Justice Supreme Court, San Antonio, Texas.

HON. W. J. GROO

The piano purchased from you about two years ago, has been in almost constant use since, and my wife and daughter say that it has proved entirely satisfactory in every respect.

Yours truly,

HON. W. J. GROO,
Middletown, N. Y.

HON. LEE MONROE

Our piano has given entire satisfaction. I am not a musician myself, and know nothing of the good and bad points of a piano; I simply know that my daughters and their teacher pronounce the instrument a good one, and say that it fully equals your representations.

LEE MONROE,
Judge 23d District Court, Hays City, Kan.

MR. P. J. WELLS, SUPERINTENDENT SOUTHERN RAILWAY

It gives me great pleasure to testify to the continued excellence of the piano which we purchased from you some three years ago. It appears to stand the changes in climate and atmospheric conditions very well. It has been in almost daily use, and, so far as I can see, it is as good as ever. One of the features of the instrument is the character of its lower tones, which are unusually rich.

P. J. WELLS,
Superintendent Southern Railway, Columbia, S. C.

THE WING PIANO

SUPREME COURT JUDGE R. P. QUARLES

The piano, Style No. 7, Circassian walnut case, recently purchased from you, is a handsome and excellent instrument. We are much pleased with the instrumental attachment, and we think that yours is a decided improvement over the instruments made by your competitors. It is the admiration of all who see it and gives perfect satisfaction.

R. P. QUARLES,
Judge State of Idaho Supreme Court, Boise City, Idaho.

I have a Wing Piano that I purchased in the spring of 1896. It gives me great pleasure to say that it is in every way entirely satisfactory. I examined many high-grade pianos before purchasing, and after such examination, selected the Wing Piano, believing it possessed more points of merit than any other, and now, after nearly two years' use, I most cheerfully recommend it to any one intending to purchase a piano.

Its uniformity of scale, pure, rich tone, and perfect action are not excelled by any make of piano that I have heard.

Permit me to say that we are agreeably surprised at its magnificent case, the workmanship and finish of which make it a thing of beauty. I can say no more than this, that if I were to buy one hundred pianos, each and every one would be a "Wing."

Very respectfully yours,

BERT HAYES,
Prosecuting Attorney, Montcalm Co., Stanton, Mich.

Some years ago I purchased one of your pianos, and wish to say that my family is still of the opinion that there is none equals it in sweetness of tone.

To those who are wanting a piano, I can heartily recommend the "Wing." Its merits are such that it is sure to meet their entire satisfaction.

J. W. CRAVEN,
Cashier Citizens' Bank, Lufkin, Texas.

It affords me pleasure to testify to the merits of the Wing Piano. The magnificent Cabinet Grand I bought of you has given entire satisfaction, and is even a finer and more handsome instrument than I had expected to find, judging from the cut in your catalogue. It is beautiful in design, has a lovely finish, and is a thoroughly well-made piano in every respect.

In tone it has a magnificent bass, and as fine a treble as any I have ever heard. In other words, it is a musical instrument in all that the word implies. It responds readily to the most delicate touch, and has never failed under the most intricate fingering.

Its singing qualities are all you represent them to be. It hasn't that stiff, twangy tone which characterizes several pianos, and stands in tune remarkably.

For two years I taught in Acadia College, where I had an opportunity of testing several makers, and finally refusing every piano sold in Louisiana, decided to get your piano, and do not now regret it.

HON. W. C. SCOTT,
Member State Legislature, Kingston, La.

THE WING PIANO

We are all well pleased with the piano—both the music and cabinet work. There is no such finish in Salida on any instrument I have seen. Our music teacher pronounced yours by far the best she had used in town.

HON. I. W. WRIGHT,
Mayor of Salida, Salida, Col.

I take pleasure in recommending the Wing Piano, having had one in use for upwards of two years, which has proven entirely satisfactory.

L. C. BEVERLY,
Sheriff Donley County, Clarendon, Texas.

It affords me great pleasure to say that your piano, which was brought into my house about three months ago, has given most perfect satisfaction. I particularly enjoy and admire its sweetness and richness of tone, the durability of all its parts, which is owing to the use of only very superior material in its manufacture and its elegance of style and finish. In every respect it is a truly beautiful instrument.

MARGERY E. JACOBY,
Superintendent Schools, Chateau Co., Fort Benton, Mont.

We have one of your high-grade pianos in our home, which we have been using for about two years, and it has given us entire satisfaction as to all the qualities desirable in a piano for the home. The tone is very sweet, and yet the volume is ample.

E. M. ELLIOTT,
Cashier Farmers' and Citizens' Bank, Nickerson, Kan.

I have no reason to change my former opinion of your piano, which we have had in use for some years. It continues to give us as good satisfaction as when first purchased.

A. R. MCKINNEY,
Secretary and Treasurer Millers' Mutual Fire Insurance Company, Alton, Ill.

I have one of your Wing Pianos ; have had it some time. It has a beautiful tone, and my wife is well pleased with it and with the finish and general appearance. If I wanted to buy another I would write you to send me the same instrument.

FRANK P. MILBURN,
Superintendent and Architect, Charlotte, N. C.

In our opinion the piano is excellent. Its special feature is its sweetness of tone. It lacks the brass band feature peculiar to some pianos, and consequently, as a parlor instrument, is superb, both in melody and appearance. We are delighted with it.

HON. I. K. HOCKLEY,
Member Pennsylvania State Legislature, Emporium, Pa

THE WING PIANO

The piano bought of you has been a very satisfactory instrument to us. We have no cause to regret our bargain. Since getting ours, have noticed quite a number of other makes of pianos, some that cost as much again as ours, but would not exchange for any of them. In case, style of finish, and tone it is more satisfactory than any other I have seen.

JUDGE WASHINGTON HINE,
Davilla, Milam Co., Texas.

After a thorough acquaintance with your piano I cheerfully say that I consider it a piano of high order and perfect mechanism. The feature of your instrument which especially pleases me is the peculiarly rich quality of the bass notes. It seems to be a difficult thing to get a piano of another make in which the bass is equal in quality to the treble. Wishing you a continuation of your past success, I am,

JOHN P. HOMAN,
Dallas, Texas.

The piano I purchased of you is giving entire satisfaction. I view it as a high-class instrument. Upon receiving it I had its various qualities passed upon by Professor Muir, of the American Temperance University, as I wanted to be certain, not being a judge myself, that for the price—which, you know, was based on your best production—I was getting a first-class instrument and full value for my investment. His assurance and opinion were fully in your favor; to such a degree, I have since learned, was he impressed, that he at once ordered an instrument of you for the university's use.

G. W. CHANDLER,
General Manager Harriman and Northeastern R.R., Harriman. Tenn

THE WING PIANO

PHYSICIANS, CLERGYMEN

Last winter my father presented me with a piano of your make. I find it perfect in every detail. The tone is particularly sweet, and it is a charming addition to our home.

MRS. LALLA GOELET-ROWELL
Saluda, N. C.

Purchased by E. B. Goelet, M.D.

It is a pleasure for me to say that I am thoroughly satisfied with the Wing Piano I purchased from you. Its external appearance, style, and material could not be improved; its internal material, mechanism, and workmanship are without fault. As a musical instrument it satisfies me perfectly. I have never heard any piano that surpassed it. I esteem myself fortunate that in buying a piano I became acquainted with Messrs. Wing & Son.

G. H. HIGGINS, M.D.,
818 San Antonio Street, El Paso, Texas.

The piano I purchased from you in 1898 is so much better in every way than we anticipated that it is impossible for me to find words to express my delight. Its tone excels any instrument I have ever heard. *The instrumental attachments are perfect; they attract the attention of all who have had the pleasure to see and hear its perfect tones.* You could not purchase it from us for twice what it cost us.

MRS. DR. J. A. DAVIS,
De Land, Platt Co., Ill.

We purchased one of your pianos about three years ago and have been pleased with it ever since. Its elegance of tone, delicacy of touch, and magnificence of construction always attract attention, especially by those capable of judging an instrument. Our instrument has been the means of selling others for you, and is therefore a talking machine for you.

JOHN R. HAMILL, M.D.,
382 South Kedzie Avenue, Chicago, Ill.

I am glad of the opportunity to express my appreciation of the piano of your make now in my home. It pleases us all very much, and now, after seeing and hearing many others, and all of them good instruments, I would still choose yours as being the best. The easy and perfect action, the uniform harmony of its tones, the clear, beautiful treble, are features in your instrument engaging instant attention, especially the last. In no other instrument do I find this bell-like clearness of the treble.

The handsome appearance is also an item not to be overlooked in an instrument. The Wing & Son Cabinet Grand is exceptionally handsome in appearance.

REV. G. C. SHEPPARD,
Washington, Pa.

THE WING PIANO

I purchased a Wing Piano of your factory in the summer of 1880, something over seventeen years ago. I found its tone full, soft, and melodious, which character it has maintained ever since. It has not, with age, acquired a harsh, metallic, and rattling sound, like many other instruments. The mechanism continues to work easily and smoothly. The tones are fuller in the high notes than many new ones. I would not be willing to exchange this piano to-day, after seventeen years' use, for many a one just from the manufacturer's hands; this, notwithstanding that it has been used continuously by one or another of my daughters pretty nearly all the time.

C. F. ULRICH, M.D.,
Wheeling, W. Va.

The Wing & Son Piano, Style 7, with instrumental attachment, recently placed in my reception room, has proved itself worthy of the most brilliant artists.

It is the universal opinion of all who have seen and heard it that it is superior to any instrument they can call to mind. It is the queen of the village, and even those who are fortunate enough to possess a piano and who have always looked upon their instrument with pride and admiration, have cast aside all jealousy and prejudice, and declare that Style 7 has no equal for its superior tone qualities, beautiful finish, excellent repeating action, evenness of touch, and its splendid workmanship.

T. E. TOWNSEND, M.D.,
Health Officer, Westwood, N. J.

I have one of your pianos, and consider it unexcelled in tone and action by any I have ever heard. So far as my business relations with your firm are concerned, I take pleasure in stating that I have always found you absolutely reliable and honest in all your dealings.

J. H. FORREST, M.D.,
Member State Board of Health, Marion, Ind.

Style No. 7 graces our parlor, and we are proud of its elegant case and superior workmanship and the beautiful finish, all of which are second to none. Often, when I sit down to play, the sweet and mellow tone makes me think how fortunate we were in selecting a Wing Piano and no other. Rev. J. D. Vitz, of Louisville, Ky., who himself is an expert performer as well as a composer, gave the piano a thorough test, and pronounced it his opinion that its fine singing quality was marvellous, and the effects that can be obtained by means of the instrumental attachment are extremely beautiful. You have every reason to be proud of your piano.

REV. F. KALBFLEISCH,
79 North Belmont Street, Indianapolis, Ind.

THE WING PIANO

The piano purchased of you, after being placed in my home on trial, receives many encomiums for its brilliancy and volume of tone, its flexible action, and its elastic touch. It is a model of elegance of finish and unrivalled for staying in tune, arriving here, after a three-thousand-mile overland trip, in perfect order. It proved to be more than what you claimed for it, and it gives me great pleasure to say that the instrument has given the utmost satisfaction and that your perfectly fair and gentlemanly style of dealing deserves the highest commendation.

P. FRANK, M.D.,
Health Officer, etc., North Yakima, Wash.

Your favors of the 16th and 23d inst. are at hand. Last Monday, 23d, we received the piano, and are pleased and gratified beyond expectation. Its appearance is beautiful and very fascinating; its tone is pure, sweet, and full. In comparing the instrument with the cut in your catalogue, we find it far exceeds the pictures in every respect. The mandolin attachment is indeed a novel one. Thus far we feel satisfied with our bargain, and, as we agreed, so will we send our first payment at the expiration of the twenty days' trial, if all remains satisfactory. The piano, stool, and extension lamp arrived in good shape, but the scarf for instrument was not to be found. As you agreed to send one with piano, we kindly ask you to forward it as soon as possible. Our stool is of red plush. Hoping to soon hear from you,

REV. M. HERRMANN,
Culbertson, Neb.

We have had one of your pianos in our home since last January. It has given eminent satisfaction in every way. Tone, action, and appearance are all right. Ours is a musical village, and all our best players are charmed with it. In quality, price, and prospective value, I know of nothing that can excel the Wing Piano. Moreover, your firm dealt with me not only justly, but magnanimously.

REV. R. ROSS PARRISH,
Romeo, Mich.

If you are getting up a new catalogue I would like to add my little mite of a testimonial for your pianos. The piano I purchased of you some eighteen months since continues to please myself and family. The tones are as rich and as clear to-day as they were when it was placed in the house. It shall always be my pleasure to recommend your piano to any prospective purchaser, as the satisfaction my own piano has given would hardly justify me in giving an adverse opinion.

DR. ROBERT L. RILEY,
237 Bermuda Street, New Orleans, La.

THE WING PIANO

MERCHANTS AND BUSINESS REFERENCES

The piano which we received from you has been placed in the home of Mrs. Belle Mast Fry, who is delighted with it. The piano has a sweet, full, round tone, which is so very pleasant that it has caused every one who has heard it to speak of this feature. The case is very handsome as well as ornamental, and the instrument bears evidence of being made of excellent materials by good workmen, who did their work in a first-class manner, inside as well as out. This will, no doubt, explain another feature, viz.: we think it will keep in tune better than many others.

MAST, CROWELL & KIRKPATRICK,

Publishers Woman's Home Companion and Farm Fireside, Springfield, Ohio.

The Wing Piano, Style No. 7, recently purchased from you, is satisfactory in every respect. The style of case is elegant. Tone sweet, yet powerful, and the action all that could be desired. If there is any one quality I would specially emphasize in considering the many excellent qualities of the "Wing" it is its *clear, singing tone* and its value as an accompaniment to the voice.

JOHN FLEMING,

3372 Twenty-sixth Street, San Diego, Cal.

It gives us pleasure to inform you that the piano which I purchased from you some years ago has given entire satisfaction. The quality of tone and the workmanship on the piano have remained unimpaired; this, taken into consideration with the fact that I use natural gas for heating my house, is sufficient evidence that the instrument is made of the best material and that the workmanship is honest and of the best description.

I can truthfully say that if I wished to purchase a piano to-day I should certainly buy the "Wing."

EDWARD DAMBACH,

Lumber Merchant, Evans City, Pa.

Referring to the piano I purchased from you, would say that after sending you my order I felt that I had been somewhat hasty, inasmuch as your instruments were not generally known in this locality, but I felt somewhat relieved when I recalled that if it was not satisfactory it could be returned after thirty days' trial. After getting it unpacked we were very much pleased with its general appearance and excellent finish, and after ten months' use it is now in as good condition as when we received it. The action is first class, the tone excellent, and general workmanship all that could be asked for. We have never regretted getting the instrument from you, and it has our hearty endorsement.

BARNARD ABEL,

Titusville Iron Co., Titusville, Pa.

THE WING PIANO

The piano you sent me has, from the first, given unbounded satisfaction in every particular. It has been subject to critical tests by musicians of note, all of whom pronounce it of fine tone, and the action so easy that it would be next to impossible to improve on either point. This easy action, such a desirable point, it has had from the day of its arrival, and can cheerfully consider that I have the finest instrument in the place. Wishing you every success possible,

C. A. MOYER,
General Merchant, Spring Mills, Pa.

I take pleasure in stating to you that the Wing & Son No. 7 Piano I purchased from you last year has given entire satisfaction. We consider the action and tone perfect. All who have tried it have spoken highly of it. I will speak a good word for it whenever I can.

GEORGE D. HARVEY,
Insurance, New Matamoras, Ohio.

In 1894 I purchased a Wing & Son Piano, and am entirely satisfied with it. The treble has the brilliant bell tone so much desired. The bass is full, round, and sonorous; the action quick and light. The beauty of design and finish of the case are unsurpassed.

Wishing you continued success and increasing sales, I am,

H. G. WOERNER,
Insurance, Sharpsburg, Pa.

I am very happy to say that the piano I bought of you last spring is very satisfactory in every respect. The tone is very fine and is admired by all who have heard or used it, and we like the case very much. The pedal action is also very satisfactory. We are glad to be able to add our recommendation of your instrument, and hope it may be of benefit.

A. B. WYCKOFF,
Dry Goods, Stroudsburg, Pa.

I have in my home one of your Wing Pianos. Have had it in use for two years, and find it to be a first-class instrument. In my business I come in contact with many different pianos, and have found none equal for richness of tone and easy action and quick response.

J. BILGER,
Lumber Merchant, Pleasant Gap, Pa.

It is with pleasure that we certify that the piano bought of you six years ago is satisfactory in every respect and is as good as new, and the tone is good. Every one that hears it remarks, "What a sweet-toned piano!" Our daughter, for whom we bought it, has married and has taken it to grace her home.

M. M. BOLAND,
Big Creek, Miss.

THE WING PIANO

With regard to the piano we purchased of you last May, it has given entire satisfaction so far. The action is very pleasant ; the tone round and full, with a very even scale throughout. The high treble is especially fine, while the bass is equally as good. The style of case, also the finish, is admired by all who see it. All musicians who have heard it think it has a splendid tone.

J. H. THOMPSON,
Dry Goods, East Meredith, N. Y.

The upright piano bought of you in June, 1894, has given perfect satisfaction. It has been greatly admired by all lovers of music for its fine, rich tone and beautiful appearance. I consider myself fortunate in buying a "Wing."

E. B. WOODRUFF,
Hemlock Lake Roller Mills, Hemlock, N. Y.

We have had one of your best-grade pianos in our home now for about three years, and consider it all right in every particular. The appearance of the instrument is far in the lead of many higher-priced makes.

H. H. KEYS,
General Manager Peach Orchard Coal Co., Peach Orchard, Ky.

I bought one of your square pianos over twenty years ago. The instrument is still in use and has given the best of satisfaction both in sweetness of tone and workmanship.

D. N. SIMMONS (SIMMONS BROS.),
Grocers, Emporia, Kans.

The piano gives excellent satisfaction and is admired by all that have seen it. You need have no hesitancy in referring any one to me, as I will do all I can to help you, and, I will add, it gives me pleasure in doing business with a house like yours.

M. HORAN (HORAN & HENAUGHAN),
Grocers, DeKalb, Ill.

I bought one of your pianos twenty years ago, and the tone of the same is as mellow and sweet to-day as it was the day I bought it.

This instrument has been tuned less than any piano I have ever known or heard of, the construction and workmanship being so perfect that piano-tuners say that it gives them but little work to do. In short, the piano herein referred to has given perfect satisfaction, and in tone and melody is a perfect instrument to-day.

J. W. HARRIS,
Hardware Materials, Americus, Ga.

THE WING PIANO

We find the instrument fully up to recommendation and all we expected. Tone, finish, and general appearance excelled by no instrument of same grade. Your manner of dealing we also find very nice and agreeable.

HUDDLESTON BROS.,
Texarkana, Ark.

I have had one of your Style No. 7 Pianos in my house now for some time, and it has given entire satisfaction in every respect. In fact, I consider it even better than you recommended it to be, and it certainly is a first-class instrument, and sold at a very reasonable figure.

E. M. WILSON (WILSON & WENIGER),
Wholesale Grocers, 222 Georgia Street, Vallejo, Cal.

I am well pleased with the Wing Piano, and consider it far ahead of any piano that I have tried for tone and light action, while its zither and orchestral attachment is certainly an advancement toward perfection in pianos.

W. L. FAUST,
Shoe Merchant, Central City, S. D.

THE WING PIANO

SOME OPINIONS OF THE INSTRUMENTAL ATTACHMENT

In regard to the Wing Piano I will say that I am well pleased with it. *The instrumental attachment adds greatly to it. I would not want an instrument without the instrumental attachment.* Have not seen a piano here that will compare with it in finish and tone.

LEE MORRISON,
Cuba, Ala.

The piano I bought of you has been a very satisfactory instrument to us. Since getting ours I have noticed quite a number of other makes of pianos, some that cost as much again as ours, but I would not exchange for any of them. In case, style and finish, and tone, it is more satisfactory than any other I have seen. *The effects that can be obtained by means of the instrumental attachment are extremely beautiful.*

G. A. DAVIS,
Belle Sumter, Ala.

I have had in my residence for the past six months one of your pianos. Before accepting this piano I had it carefully examined by a musical professor from one of our best colleges, and he pronounced it first class in every particular. This piano has been used by children, for practice, subjecting it to rough usage, and its tone has not changed in the least, *and the new attachment is one of its special features.* At the time I purchased this instrument there were several agents representing first-class piano houses that examined our piano with a view of placing one of their instruments in its stead, but in each instance they were completely surprised to find as high a grade piano as this for the money, and could offer me nothing better. I am,

R. W. HUIE,
Daleville, Ark.

Three months ago I received your piano with instrumental attachment. It is all right, very pretty, and has a very rich, mellow tone. There is nothing harsh or metallic about it. I have just seen an exhibit of pianos at our district fair. There were several makes and a variety of styles. Of course I made a comparison with my own piano, and none were more tasty in design and finish or better in tone. I am satisfied with it.

C. A. GARRETT,
Grizzly Bluff, Humboldt Co., Cal.

We have one of your make of pianos now in daily use, and it has given us a great deal of satisfaction, being sweet in tone, easy of action, and of pleasing appearance.

The attachment enabling a performer to imitate the harp, zither, mandolin, and banjo, is a pleasing diversion and novelty. The instrument has been greatly admired both as to sweet singing tone and beauty of finish.

W. T. BURT,
Ontario, San Bernardino, Cal.

THE WING PIANO

In regard to the piano (of course this is rather bigoted), that out of the Chickering, Knabe, Smith, Vose & Son, Everett, and many others, upon which I have performed, I consider that my piano is the finest in town. Not only in tone, vibration, action, harmony, volume, but the case is the most beautiful. Agents have called and testify that it is a handsome case. *This is not speaking of the attachment, which is a marvel to many.* My sister, who has been pianist for the Hoyt Company and others, and travelled East and West, says it is a fine instrument. I am very proud of it now.

MABEL KINDALL,
Junta, Colo.

I have received your piano, Style 29, December 25, 1898, and since then have had a good many musicians visit my house, and among them some of the very best music-teachers of Colorado Springs, and they all seem of one opinion, that it is a first-class instrument in every form, and the touch is the finest, and I must say that I am well satisfied with the piano of your selection as though I had chosen it myself. *The instrumental attachment of the piano is simply grand for an evening amusement, as one would think themselves where there were several different instruments.*

MR. J. B. KINTZ,
Roswell, El Paso Co., Colo.

Received your Upright or Cabinet Grand and it has given excellent satisfaction in tone, action, and durability. *The instrumental attachment is greatly appreciated by all who have heard it.*

F. R. COATES,
Stamford, Fairfield Co., Conn.

I have one of the Wing Pianos. *The instrumental attachment, to say the least, is simply magnificent.*

FRANK WAGONER,
Carterville, Conn.

Piano bought of you some time ago continues to give satisfaction. I consider it near perfection; in workmanship, design, and durability, tone and action, it has no superior. The tuning stands well and *its instrumental attachments are a great improvement over the ordinary single tone.*

C. C. CLAYTON,
High Springs, Alachua Co., Fla.

The Wing Piano my wife purchased of you eight months ago has given entire satisfaction. We are not able to find any fault with it and have full confidence that it will prove all that you recommend. It is praised very highly by competent music-teachers of our city, and also by friends, for its fine tone and action. The workmanship is also greatly admired by all who have seen it. *The mandolin and orchestral attachments are delightful.* Altogether we think the Wing Piano a superior instrument.

W. A. STILLEY,
Tallahassee, Leon Co., Fla.

One of your Style No. 26 has been in our home three months or more and has proved itself to be far superior to any make we have thus far ever had anything to do with. It is simply a beauty. Case could not be made more handsome; the action, sound, and tone are excellent. *The instrumental attachment is grand.* We would not part with the piano at any price. "Always a Wing Piano for us."

MR. AND MRS. D. G. MATHERS,
Verona, Grundy Co., Ill.

We are more than satisfied with the piano in every respect and *especially with the instrumental attachment.*

W. H. BATTAN,
Auburn, Sangamon Co., Ill.

THE WING PIANO

Having had one of your pianos, Style 21, in my house since last November, and having given it a fair trial, I must state that I am very well pleased in style and finish, and it is equal to any other make I have seen. The tone is very sweet and pure, and the action is remarkably easy for a new piano. *The instrumental attachment gives much pleasure to all who hear it.* It is with pleasure I state these facts.

MRS. W. SAMUEL,
Indianapolis, Marion Co., Ind.

We are well pleased with the piano in every way, and as for the tone, we think it is fine. Everyone that sees it says we have a fine piano, and the tone strikes everyone. *The attachments are fine.*

CHAS. L. BROWN,
Frankfort, Clinton Co., Ind.

The piano I purchased of you last spring has thus far given perfect satisfaction. *I especially admire the instrumental attachment. For my part I wouldn't be without it. It surprises a good many when they first hear it, as ours is the only one around here that has the attachments.*

N. H. DETTMER,
Garnaville, Clayton Co., Iowa.

I find it a difficult matter after so short acquaintance with your remarkable piano to express an opinion of its merits that will do it justice. But desire also to express in the strongest terms my absolute satisfaction as to tone, touch, action, and make-up. The Wing is too well known to require any discussion of its many excellencies, but *the instrumental attachment has practically made it a new instrument, endowing it with a variety of tone-color that has heretofore been one of the great wants of the piano. One of the chief merits of the attachment is that it does not in the least interfere either with the action or tone.* I earnestly advise all who are interested in music to examine the Wing Piano before buying elsewhere.

W. D. LASHBROOK,
Waverly, Bremer Co., Iowa.

The Wing Piano which I purchased from you gives entire satisfaction. It is all that you recommend it to be. It has the sweetest tone of any piano I have ever heard, and its appearance is just handsome. *The attachments are just lovely.* I recommend it to anyone wishing a first-class piano.

MRS. W. F. GRAS,
Olathe, Johnson Co., Kan.

The piano we bought of you was in good tune and it continues so; seems, if possible, to get better. The practice does not seem to injure it in the least, and our daughter practises from four to five hours daily. The case is simply beautiful, and the tone perfect compared with any other we have ever heard. *Everyone is delighted with the attachment; we think the banjo is perfect.* We heartily recommend it to anyone wishing to purchase a first-class instrument.

MR. AND MRS. J. A. WILSON,
New Liberty, Owen Co., Ky.

The Wing Piano is away beyond our expectations for the price asked, and if I had to buy hundreds more I would buy the Wing. It is perfect in action, tone, finish, style, and workmanship. It is pronounced by everyone who sees it the handsomest piano in Bourbon County. One dealer, who is acknowledged the best musician in Kentucky, and who priced me several other makes, performed on my instrument yesterday and said it was perfect in every sense.

E. B. JANUARY,
Paris, Bourbon Co., Ky.

THE WING PIANO

We purchased a piano from you in December, Style 29. It is all we could desire; I think it is the nicest and best piano I ever saw, and gives perfect satisfaction. *The attachment is perfect, and everyone who hears it says it is the best piano in town.*

MISS ANICE HARDY,
Logansport, De Soto Co., La.

It shall always be my pleasure to recommend your pianos to any prospective purchasers. The piano I purchased of you some eighteen months ago continues to please myself and family. The tone is as rich and clear to-day as it was when it was placed in the house. *We have congratulated ourselves at having had an instrument with the mandolin attachment. It certainly is worth the sum expended.*

DR. ROBERT L. RILEY,
237 Bermuda Street, New Orleans, La.

The piano we purchased of you in June continues to give perfect satisfaction in every respect. It is a beautiful instrument, and one of which anyone may well feel proud. All who have seen it remark, "What a lovely piano!" and when they have heard its beautiful rich tone they are even more lavish in their praise. I am glad we got a Wing Piano, for I am sure it has no superior. I like the tone better than any other piano I have ever heard. There is something in the tone which seems to be lacking in any other piano; its singing quality has not been over-estimated, for I am sure it has no equal in this respect. It stays in tune remarkably well; notwithstanding the fact that it is in almost constant use, it is in perfect tune. *The instrumental attachment is fine and a source of much enjoyment, the imitations are so true as to deceive those who do not see it played upon.*

MISS ANNIE V. CHANEY,
Conaways, Anne Arundel Co., Md.

I purchased a Wing Piano last fall, and so far it has proved all that was claimed for it. Our music-teacher pronounced it as one of the best. It is admired by all that use it for its richness of tone, material, and fine workmanship. *The zither and orchestral attachment make it one of the best instruments I have ever seen.*

EBEN VAN ORDEN,
159 Riverbend Street, Athol, Mass.

It gives me much pleasure to certify that the piano has been all that could be desired, giving every satisfaction. It fully equals your representations. I am satisfied we have got a good piano; the tone rich and mellow; the action is perfect, the beauty of design and finish of case are very pleasing. We have had many friends see it and all admire it. *The instrumental attachments are marvellous for their effects and are extremely delightful.* After three months' use the tone is perfect. It will always give me pleasure to recommend your piano.

JAMES MORRISON,
26 Meadow Street, North Adams, Mass.

It affords me much pleasure to testify to the merits of the magnificent Cabinet Grand we purchased of you. It has a beautiful appearance. Its tone is clear, strong, and very musical, while its singing qualities win the admiration of those who can judge. It is in all a strong instrument. *In regard to the instrumental attachment we would not be without it.* We are delighted and more than pleased that we decided as we did in purchasing a "Wing." We recommend it, but the Wing & Son Piano recommends itself,

CLARA W. PAYNE,
Sutton's Bay, Leelanaw Co., Mich.

THE WING PIANO

We have one of your pianos in our home and find that it is all that you have recommended it to be. As it is in the King Hotel it necessarily gets more use than it would in a private house, as many different people have occasion to use it from time to time. *The musical attachments seem to be particularly in demand and make a very nice combination.* The instrument is generally praised by those who use it as being a very nice one for tone and general appearance, and those who contemplate buying a piano cannot go amiss if they make a choice of a Wing.

E. KING,
Reed City, Osceola Co., Mich.

I have one of your Upright Grands in my house and up to the present time can frankly say that I am exceedingly well pleased with it in every respect. *The tone, action, instrumental attachment, appearance, and workmanship* are strictly as represented and are highly satisfactory in every particular. Were I contemplating the purchase of another piano I would duplicate my order.

A. A. McRAE,
Hutchinson, McLeod Co., Minn.

I am pleased to say that the piano purchased from you some time ago gives splendid satisfaction in every respect and fulfils every expectation. In fulness of tone, clear and sweet, it is unexcelled. *The attachment is another valuable feature, and as a whole the instrument is one of the best make.*

MR. O. H. LINDELL,
Grove City, Meeker Co., Minn.

Had one of your pianos since last June and must say it is as sweet a toned instrument as I ever listened to. All who have heard it pronounce it perfect; *am delighted with the attachments.*

H. KENNARD,
Yazoo City, Miss.

The piano bought of you gives perfect satisfaction in every respect. It is beautiful in appearance, elegant in design, apparently strictly first-class workmanship, sweet toned, and, after shipping it more than a thousand miles and constant use for four months, is still in perfect tune. I am very much struck with this feature of the piano, as I fully expected I would have to have it tuned in a short time after getting it. *We are very much pleased with the attachments also.* With them we can have a variety of music that is quite pleasing. I am free to admit that I got more than I expected when I ordered the piano.

MR. W. H. MADDEN,
Tahula, Holmes Co., Miss.

Last September I purchased one of your Grand Upright Pianos, Style 29, and now, after six months' use, I wish to say that it gives perfect satisfaction in every respect. In its rich, massive appearance, artistic finish, lightness of touch, excellent tone qualities, and, in fact, in everything that goes to make up an ideal piano it stands, in my opinion, second to none. *Its instrumental attachment, which imitates perfectly the tone of the mandolin, guitar, harp, and banjo, at the will of the performer, is a triumph of mechanical skill.* Not only am I perfectly delighted with the instrument, but wish to thank you for your courteous treatment in correspondence.

W. E. ALLEN,
Olean, Miller Co., Mo.

We have used a "Wing Piano" for a year and find that it holds the tone perfectly; the tone is beautiful and the touch perfect. We think it the equal of any of the much advertised high-priced pianos. *The instrumental attachments are a great aid to the voice as an accompaniment in singing.*

T. F. WELBORN & SON,
Indianola, Red Willow Co., Neb.

THE WING PIANO

We feel called upon to acknowledge our entire satisfaction with this bargain. After having the piano in our home for a year now, we would not be without it.

REV. M. HERRMANN,
Gulbertson, Hitchcock Co., Neb.

In regard to the piano I bought of you, I can only say it is more than satisfactory. *I have had it tuned and all the attachments work in perfection.* The tone is very fine, and the action is admired by all who have played on the piano.

RUTH S. HEALEY,
Raymond, Rockingham Co., N. H.

Your piano is all and more than was recommended in workmanship, finish, and tone. I have not seen any to equal it in our neighborhood, although the cost of some is double. *The extra attachments are grand.* We have had our piano since December, 1897.

CHAS. E. CARTER,
Barnegat, Ocean Co., N. J.

Have played on your instrument for quite a number of years. It was not quite a year ago when I purchased a Wing Piano with the instrumental attachment. To say I am well pleased with it would be stating the case very mildly. For sweetness of tone, for perfect action, correctness of tone on all keys, as well as elegance of finish and perfection of construction throughout I do not believe your instruments can be excelled. *The instrumental attachment is a great feature.* The Wing instrument which I used in my studio for nearly one year was used from morning till night; it is as good to-day as the day it was placed in my studio. Everyone that plays on it, and people come from far to see it, speak very highly of it. To anyone wanting a first-class make piano I would say buy the Wing & Son Piano.

WM. OSINS,
60 Vanderpool St., Newark, Essex Co., N. J.

I am using one of your pianos and can recommend the instrument especially for its purity and sweetness of tone. *The orchestral and mandolin attachments afford great pleasure.* Altogether I find the piano entirely satisfactory, and find great pleasure in saying so to all my friends.

CARRIE E. HOFFMAN,
145 West 129th Street, New York City.

It affords me great pleasure to say that the piano which I bought of you about five months ago has given most perfect satisfaction. I particularly enjoy and admire its brilliancy and volume of tone, its flexible action, and its elastic touch. It is a model of elegance of finish and unrivalled for staying in tune. *The instrumental and mandolin attachments are indeed novel.* Thus far I feel satisfied with my bargain. In quality, price, and prospective value I know of nothing that can excel the Wing Piano.

MISS GEORGIA MERWIN,
Dundee, Yates Co., N. Y.

I have had one of your pianos in my home now for some time. I like it very much indeed. It produces the clearest tone I ever heard; it is clear and distinct, and that is what every person wants; the tone is very sweet, and the case is beautiful. *The mandolin and orchestral pedals are just lovely.* I would not be without them if any other chance. They are so nice for concerts.

MISS STELLA PHILLIPS,
Liberty, Randolph Co., N. C.

The piano that we purchased of you has given perfect satisfaction. *The attachments produce a delightful effect.* The case is admired by all who see it.

MRS. J. J. ADKINS,
Southport, Greenwich Co., N. C.

THE WING PIANO

I take pleasure in saying that the Wing Piano I purchased from you last year has given entire satisfaction. The action and tone are perfect. All who have tried it pronounce it a grand instrument. *Our professor told me that the mandolin attachment was the best that he had ever heard, and the case is one to be admired.*

MRS. O. N. RUSHFELT,
Valley City, Barnes Co., N. D.

The piano I bought of you last October gave good satisfaction and bears evidence of being made of excellent material and by skilled workmen. I esteem the "Wing Piano" highly for its many qualities of tone, purity, sweetness, soft and musical tone which blends in one harmonious whole. *The instrumental attachment of the Wing Piano shows great genius of mechanism.* I think they are perfectly grand; all that is required is an expert performer on the Wing Piano to make it perfect.

MRS. MARTHA BAKER,
1169 North Ohio Avenue, Sidney, O.

The piano I bought of you in December, 1898, we like better every day, and everyone who has seen it and heard it all say the same thing—that it has such a pleasing tone as a piano and the *instrumental attachment is as good an imitation as can be found in one instrument*, and all who have played on it declare that it has the best and easiest action that they have ever touched on an upright piano. There are no less than twenty pianos in our neighborhood, but I have not heard of one that I would exchange this one for, and it is not the least bit out of tune.

J. E. WYLER,
Mt. Hope, Holmes Co., O.

The No. 21 piano you shipped me has given entire satisfaction. We are more than pleased with it, and its tone is good; better, it has been tested by the best of piano players and all of them give it the highest of praises. *The attachment cannot be beat.*

JOHN F. RICE,
Norman, Cleveland Co., Okla. Ter.

The piano we purchased from you in December last has proven entirely satisfactory in every respect, *the tone and instrumental attachment being unequalled by any I ever saw.* I would not sell it for double the price paid, if it was impossible to purchase another like it. Everyone who hears it is delighted.

MRS. COLLIER WILLIAMS,
Woodward, Woodward Co., Okla. Ter.

Having one of your pianos in my home, it gives me the greatest pleasure. Its tone and workmanship are all that can be desired. It surpasses all others that I have ever seen. *The prominent feature of the piano is the instrumental attachment, with which I am very much pleased.*

DAISY BISHER,
Plymouth, Luzerne Co., Pa.

I have had one of your pianos in my house for three years and am very much pleased with it. Would have no other had I to buy again. The tone and workmanship are perfect. I am satisfied and it can't be beat. I am glad to recommend the Wing Piano to anyone wanting a first-class piano.

C. L. FORD,
Georgetown, Georgetown Co., S. C.

THE WING PIANO

I cannot say too much regarding the piano I bought of you about five months ago. Its appearance is beautiful and very attractive; its tone pure and sweet and full. We have had it tested by one of the best musicians in town, and proves it to be one of the best pianos here. *The instrumental attachment is exceptionally fine and is admired by all who hear it.* It has proven to be all you have recommended it, if not more. Its tone is as perfect to-day as the day we received it, and I must say we are all highly pleased with the piano.

D. W. AYERS,
Orangeburg, Orangeburg Co., S. C.

The piano I purchased of you four months ago has delighted all who have seen and heard it. The action, the tone, the finish, are each the best I have ever seen in such a priced instrument. *The instrumental attachment makes a pleasing variation to the ordinary musician.*

MISS IDA SOUTHWICK,
Arlington, Kingsbury Co., S. D.

I am well pleased with the piano and consider it far ahead of any piano that I have tried for tone and light action, *while its zither and orchestral attachment is certainly an advancement toward perfection in pianos.*

W. L. FAUST,
Central City, Lawrence Co., S. D.

We think we have a fine instrument; the tone is soft, sweet, and melodious, and *players like to use the mandolin attachment.*

G. D. WOODARD,
Fayetteville, Lincoln Co., Tenn.

We wish to say that the No. 2 piano purchased of you something near a year ago, we have now in our home and we cannot speak too highly of it in every particular. *The musical attachments are an immense success.* The finish and gloss is just as bright and nice as the day when we placed it in the parlor, and the instrument is in just as perfect tune as when we first received it. We need not pick out any one point of excellence, but will say it is just perfect in all points. Professors and teachers of music who have tried it say it is the sweetest and most perfect and complete instrument they ever knew. We cannot speak too highly of it.

MESSRS. ELLAS & SON,
Pilot Mountain, Morgan Co., Tenn.

I have had the piano tested by several of the best professors in town and they all pronounce it to be a grand instrument in tone as well as its beautiful finish and its elegant carvings. *The instrumental attachment is something that no other piano in town has.* As for myself, I can only say that it is one of the loveliest pianos that I ever saw, and my delight at seeing such a beautiful instrument was too great for words.

HILDA OHLSEN,
Galveston, Galveston Co., Tex.

The Concert Grand Piano which I ordered from you several months since has given splendid satisfaction. *We are well pleased with the orchestral attachments as well as its sweetness of tone and beauty of workmanship.* I am sure we made a wise choice in selecting the Wing Piano. Everyone admires the woodwork (quartered oak) so much.

J. J. BARTON,
Plain View, Hale Co., Tex.

CARE OF THE PIANO

To keep the piano in perfect order it should be properly cared for. The piano should not be allowed to remain in a damp room nor near a furnace register or heating-stove.

Keep the piano closed when not in use, and especially when the room is being cleaned or aired. If the piano is not in use regularly, open it occasionally, as the ivory will become yellow if deprived of light too long.

Dampness is very injurious to the mechanism. It will cause the strings and other metal parts to rust, and will affect the action and keys. The piano should not be placed close to an outside wall.

When strings begin to rust it is a sure indication of undue dampness.

It is well to have the case polished once a year. This preserves the varnish finish and helps to keep it from checking.

Extreme heat or cold will injure and check the varnish.

Any hard substance, no matter how small, when dropped inside of a piano, will cause a rattle or jarring noise.

A sudden change of temperature, as from extreme heat to extreme cold, and *vice versa*, is very injurious. If a room is allowed to become very cold, do not at once build a hot fire close to the piano, but heat the room gradually.

Even though the piano may not actually need it, it is always wise to have it tuned once a year, and three or four times the first year.

Selection of a tuner is of great importance, as an incompetent tuner can do great damage.

An incompetent tuner will usually magnify a slight trouble in order to

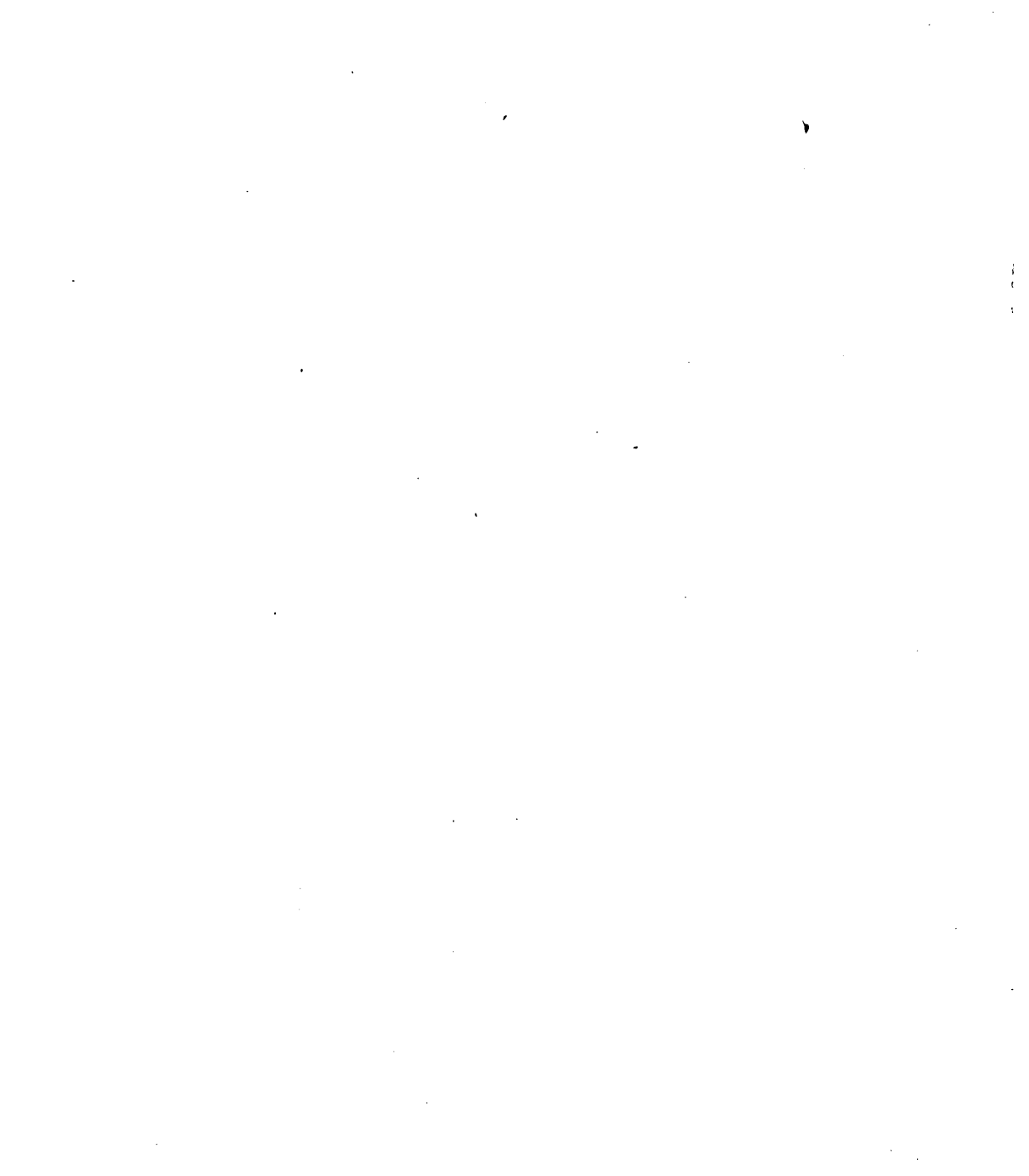
THE WING PIANO

justify a high price. It is best never to engage an unknown tuner, or if one is engaged, be careful to examine his references, and be satisfied that he is reliable and experienced.

To guard against moths, which are destructive to the cloth and felts, a piece of camphor wrapped in paper should be placed inside in one corner of the piano.

Under no circumstances rub the varnished surfaces with anything dry. To dust the case brush over it *lightly* with dry cheese-cloth. This is better for the purpose than silk or chamois. If the varnish looks cloudy, saturate the cheese-cloth with lukewarm water, wring dry, and wipe the case rapidly.

Do not use any polish that is not procured from us, accompanied by directions for its use.





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